COTTON

MAY SERVING THE 1942

Textile Industries

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COPY
CENTRAL SERIAL RECORD

VICTORY AND VISION . .

. . rise from the blueprints

The mental concept of a plant effective for rapid production is translated into plans by the Engineer—plans which are refined on the drawing board and then recorded in blueprints.

This is the path to speed—in construction and production alike.

This is the path to Victory through output and to future conversion for other needs and uses through vision.

Such a highly organized task calls for the comprehensive Engineering experience of many men, each trained in the solution of special problems which complicate the construction and operation of modern plants.

This type of coordinated Engineering experience is available through the eight departments of

J. E. SIRRINE & CO.
Engineers FOR 40 YEARS
GREENVILLE • SOUTH CAROLINA

INDUSTRIAL PLANTS • PLANS AND DESIGNS • POWER
LOCATION STUDIES • WATER SUPPLY AND TREATMENT

STRENGTH For The Future

Even in normal times, a strong liquid capital position is desirable. Now, more than at any time in history, ready cash is an important asset to all businesses.

And Commercial Factoring assures you of a steady source of ready cash!

By providing cash on shipment—with usual terms to customers—by relieving you of credit risk, collection expense, bookkeeping costs . . . Commercial Factoring avoids tying up your working capital for 30, 60 or 90 days.

Find out how Commercial Factors can help you strengthen your business . . . now and for the future.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
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TWO PARK AVENUE, NEW YORK

MAY 18 1942

Our Government Tells Us

We Can Build Looms Only on Priority Orders

But Textile Products
Are Wartime Essentials
For Our Fighting Forces — The Looms You Now Have Must Supply a Great Part of Them

This Puts it Up to Us and to You To See That Your Looms Are Kept Fit

On Our Part — Our Service on Loom Repair Parts is Practically as Good as in Peace Time

The Government is Backing us by Authorizing the Procurement and Use of Necessary Materials to Keep Up This Service

On Your Part — Keep Your Looms at their Highest Efficiency with Draper-made Repair Parts

Makeshift Repair Parts Reduce both Quantity and Quality of Product

Draper-made Parts Keep Your Looms as Good as New because they are Like the Parts that Came on the Looms

New Looms Can Be Furnished — Only when a Priority Rating is Granted by the Government

You Should Investigate—Let's Talk It Over

DRAPER CORPORATION

Atlanta Georgia — Hopedale Massachusetts — Spartanburg S C

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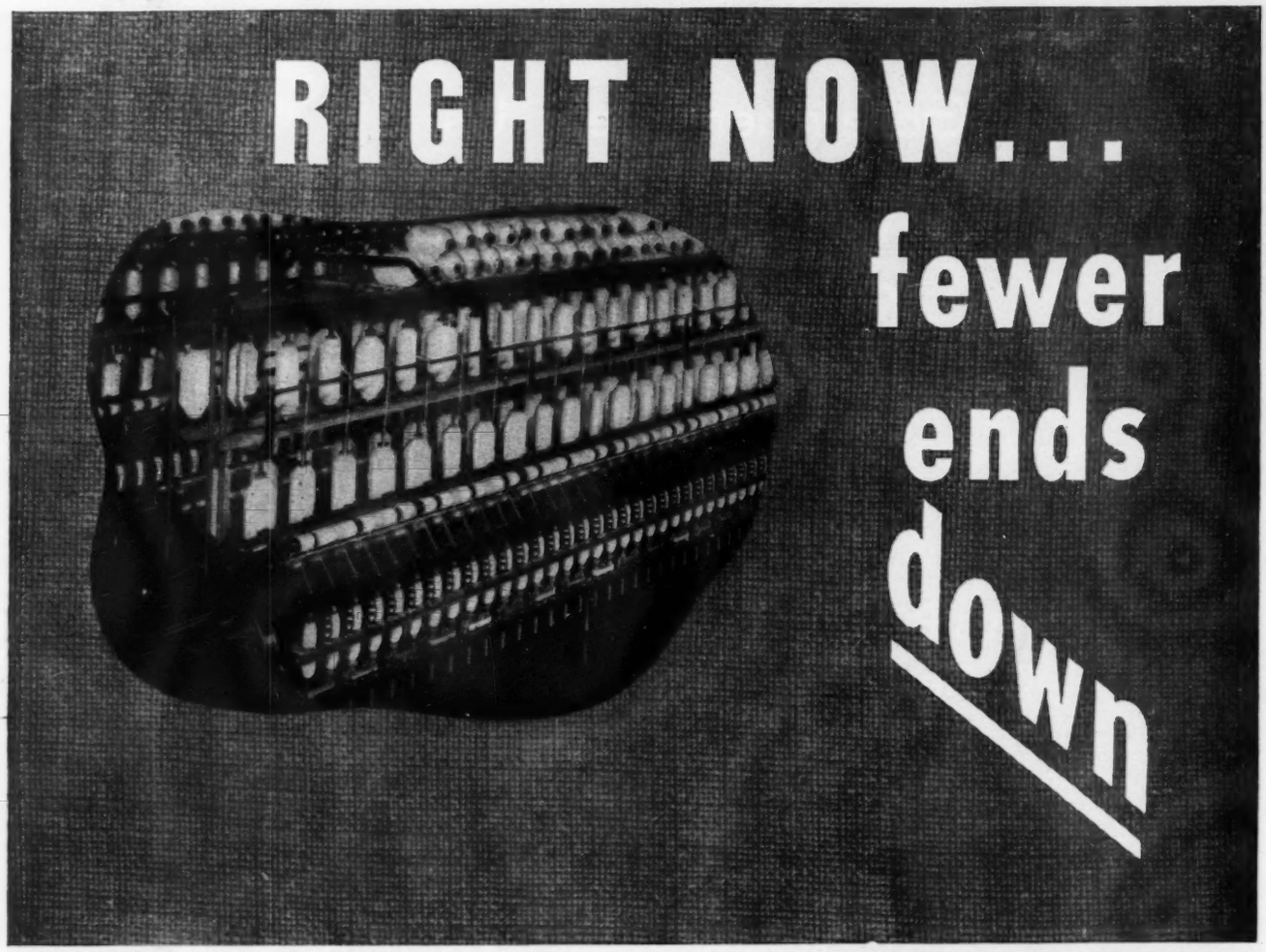


DESPITE the added strain of 3-shift operation, you can step up your spinning room output . . . definitely reduce your ends down per thousand . . . by conditioning fibres with *Texaco Texspray Compound.*

Applied without compressed air in the beater chambers of the pickers, *Texspray* softens brittle fibres, prevents breakage of long fibres, assures a smoother, easier drafting stock.

Texspray also eliminates dust and fly, providing healthier working conditions, stimulating worker morale and efficiency. Texspray system is available in recognized textile areas only.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent textile mills everywhere.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distribution points in the 48 States, or write:

The Texas Company, 135 E. 42nd St., New York, N. Y.

Care for your Car ..for your Country

THEY PREFER TEXACO

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

FOR YOUR ENJOYMENT

FRED ALLEN every Sunday night. See your local newspaper for time and station.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

More of What it Takes to

"KEEP 'EM FLYING"

To meet aviation-grade specifications, lubricating oil must be decolorized to remove carbon-forming color bodies . . . a process that can become the bottleneck of the refinery. Now MAGNESOL . . . a synthetic adsorptive magnesium silicate...is successfully increasing the output of refinery decolorizing facilities.

Also used in dry-cleaning solvents to remove soluble impurities by adsorption, Magnesol may have applications in the chemical industry wherever a highly-efficient adsorbent agent is required. A recent 60% increase in Magnesol production facilities assures an ample supply.

Magnesol T. M. Reg. U.S. Pat. Off.

WARNER CHEMICAL COMPANY

Division of WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

CHICAGO, ILL. · GREENVILLE, S. C. · NEWARK, CAL.

CONCENTAL

An AHCO PRODUCT

FOR SOFTENING COTTONS and RAYONS

IT BEATS THE BARREL SHORTAGE AND HIGHER SHIPPING COSTS . . .

1. Highly concentrated, it saves transportation and storage costs and requires fewer containers.
2. Much less is also required to produce a given degree of softness.
3. A COMPLETE softener for almost all cottons and rayons, it eliminates many items of inventory.
4. It penetrates deeply and lubricates effectively.
5. Easy to use, being completely soluble in water at 135° or over, leaves no scum on bath, and is compatible with all starches, waxes, gums, and resinous materials.
6. Does not deteriorate with heat or age.
7. Highly stable in hot or cold solutions and in presence of acetic acid.
8. It is STILL available in adequate quantities.

ARNOLD-HOFFMAN & CO., INC.

Established 1815 PROVIDENCE, R. I. Plant at Dighton, Mass.

NEW YORK ● BOSTON ● PHILADELPHIA ● CHARLOTTE

WHEN SO LITTLE CAN DO SO MUCH

- There might be an honest difference of opinion as to the concrete value of salvaging old razor blades and empty tooth paste tubes in the all-out war effort.

- There is absolutely no question about the vital need for full production from our textile mills to meet our service requirements and the essential civilian market needs.

- War conditions must rule out the possibility of purchasing new machinery for many cotton mills. This puts a spotlight on their existing equipment.

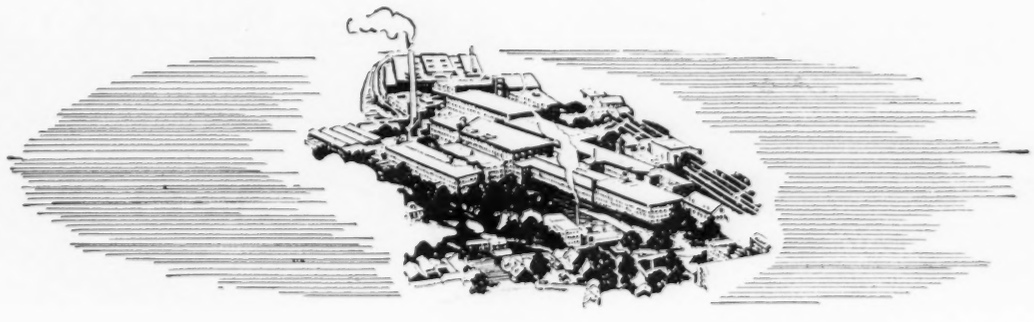
- In no department in a mill can so much be gained by so little in expenditure of both material and money as in the application of the Whitin improved drafting systems to roving and spinning frames. With these systems, a mill is able to turn out an equal yarn production with no sacrifice in quality, and with the use of fewer preparatory machines in the roving process.

- The flexibility of a mill is greatly increased when improved drafting systems are installed. In the present emergency, which finds some mills ill-equipped to produce yarn counts for which there is demand, the solution is often the adaptation to present machines of the modern Whitin drafting systems.

WHITIN MACHINE WORKS

Whitinsville, Massachusetts, U. S. A.

Charlotte, N. C. **Atlanta, Ga.**



Calco looks to the Future
—with the Electron Microscope

THE first commercially built electron microscope ever placed in service in American Industry has been in use for several months at our Stamford Laboratories.

Here, for instance, is an example of the astounding magnification obtainable with this instrument. Some bacteria are so small it would take a thousand of them to make a single fine line on the head of a pin. Yet under the electron microscope a single one of these can be made to appear the size of a small cigar.

In the field of dyes, the electron microscope clearly reveals the shape and uniformity of the tiniest particles —supplements with concrete evidence our best scientific conjectures about factors that affect their performance qualities in actual use.

Because we are looking ahead of today's difficulties in ways such as this, you can count on one thing for certain—Calco dyes are being consistently improved in order to make their performance more dependable, more economical for you who use them.

Electronmicrograph of Zinc Oxide Smoke at 19,500 X reveals characteristic crystalline structure of the burned substance.

CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

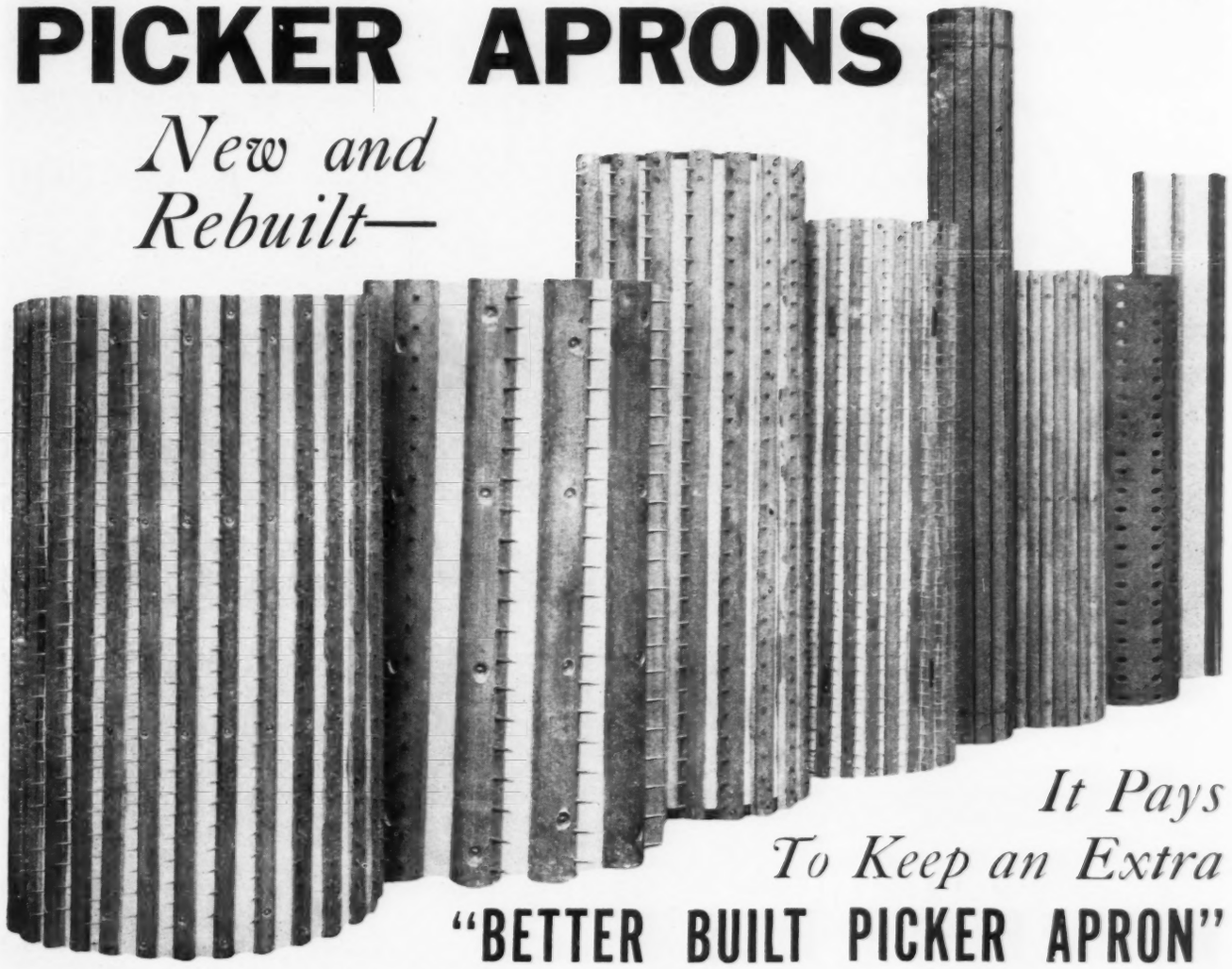
Boston • Philadelphia • Providence • New York • Charlotte • Chicago

Calco Dyes are Better Buys

Calco

PICKER APRONS

New and Rebuilt—



It Pays To Keep an Extra

"BETTER BUILT PICKER APRON"

on Hand at All Times. It Will Save You Money in Case of Fires and Break Downs - - - - - - - -

We manufacture New and Rebuild all types of Aprons for Hoppers, Pickers, Openers, Waste Machines, Breakers and Garnet machines. Both Spiked and Plain. We also can furnish Slats in Both spiked or Plain.

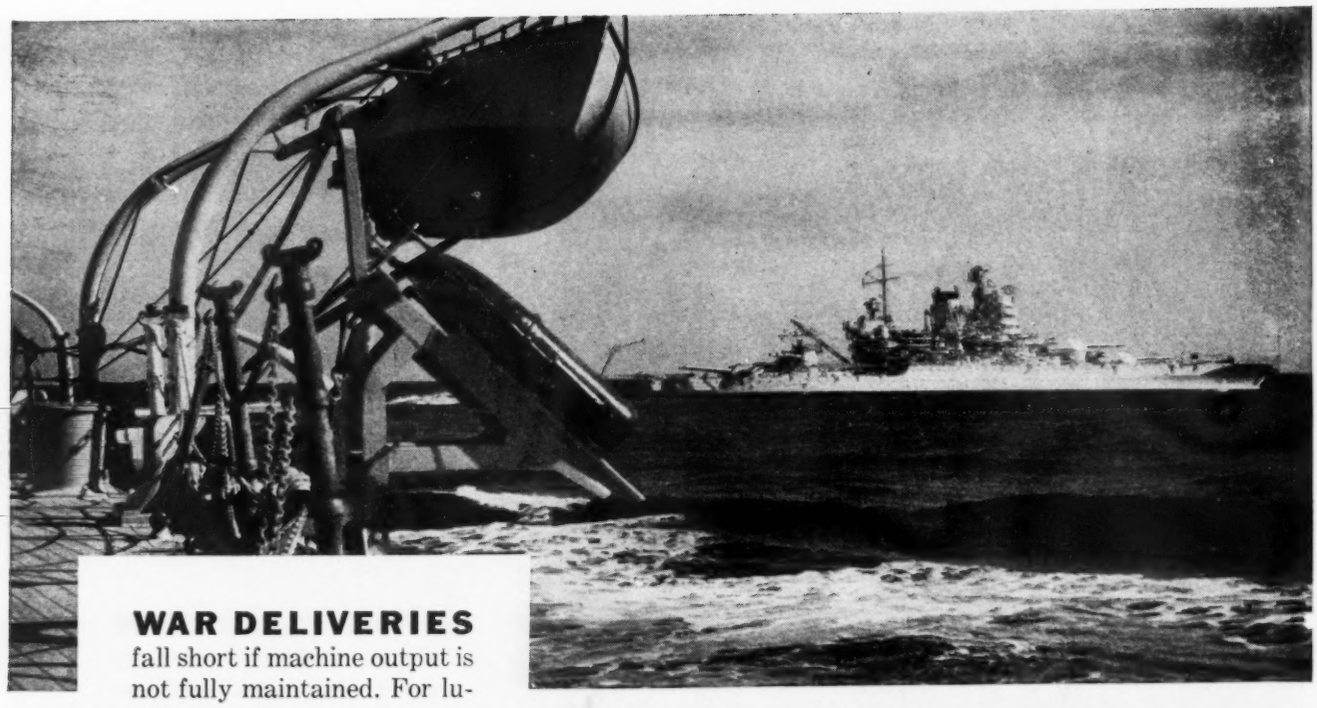
We use the best of materials obtainable in the manufacture of our Aprons, such as Spikes, Slats, Leather, Canvas, etc., therefore, every Apron that we build carries a Guarantee.

All Inquiries or Orders will have our prompt attention, either Small or Large. Over night service to nearby customers.

C. L. UPCHURCH & SONS, INC.

Textile Machinery and Supplies

ATHENS, GEORGIA -:- **CHARLOTTE, N. C.**



WAR DELIVERIES fall short if machine output is not fully maintained. For lubrication that promotes sustained top production from *TEXTILE MACHINERY* use . . .

. . . SINCLAIR LILY WHITE SPINDLE OILS. These oils have viscosities for operation at all spindle speeds with avoidance of high temperatures and power loss:—Also **NO-DRIP LUBRICANTS** offering correct, non-oozing lubrication of top rolls, and *Knitting Machinery* Oils.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

A SPINNING ROOM *in Newberry Cotton Mills, Newberry, S. C. Sinclair lubricant has given satisfaction for a number of years.*

SINCLAIR TEXTILE LUBRICANTS

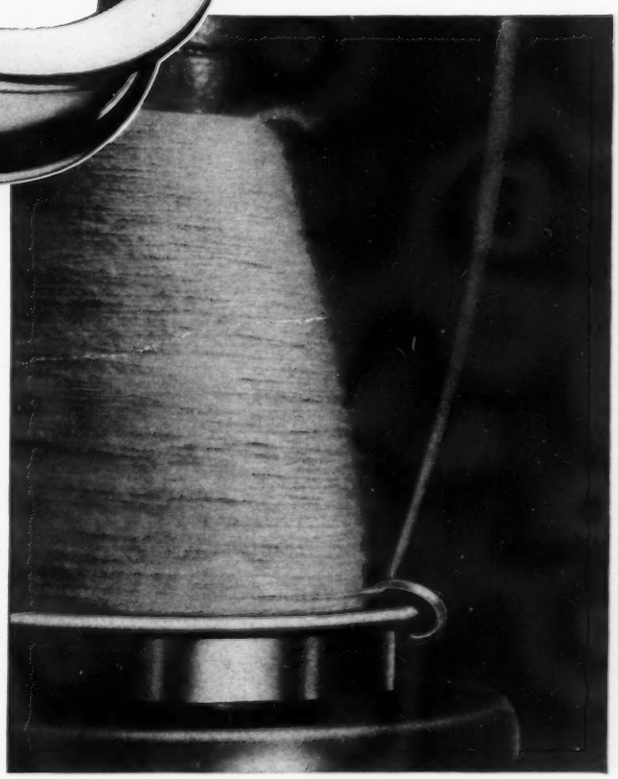
FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

PAWTUCKET RINGS

Vitritex
FINISH



Many factors contribute to the spinning of good yarn . . . and the ring is one of them. When old and worn it affects the performance and life of the traveler—and thus indirectly affects the quality of the yarn by causing variations in the size and tension of the balloon.

The efficiency of a ring depends upon the permanence of its finish. The finish on a Pawtucket Ring is an exclusive development. It is glass-smooth, hard as granite, and highly resistant to wear. The texture of this finish is so fine grained that it is nearly non-porous. Thus it is almost impervious to the tarnishing effects of moisture in the highly humidified spinning room.

Pawtucket Rings are a definite contribution to good spinning, steady production and better traveler performance. We will gladly furnish samples on which you can make your own tests.

GIVE YOUR TRAVELERS
"A TURN FOR THE BETTER"

Pawtucket SPINNING RING COMPANY, CENTRAL FALLS, RHODE ISLAND
(Subsidiary of Saco-Lowell Shops)

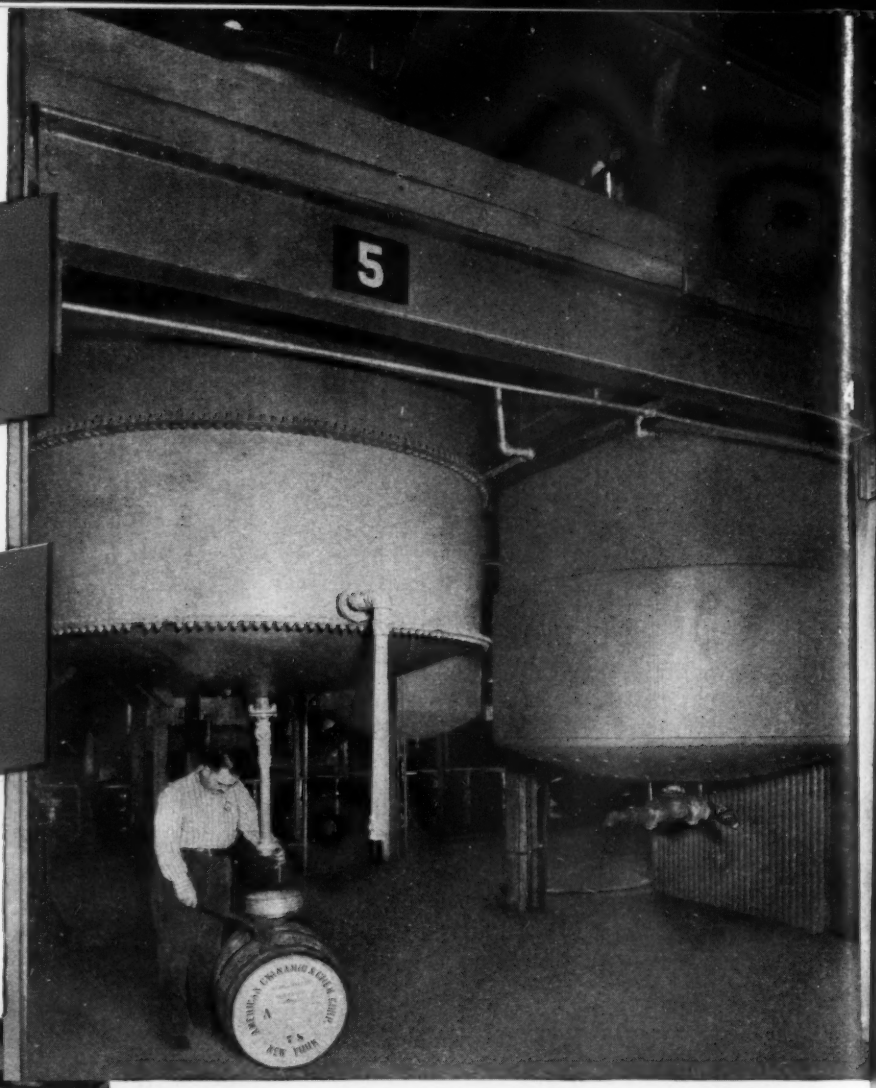
The practical advantages of

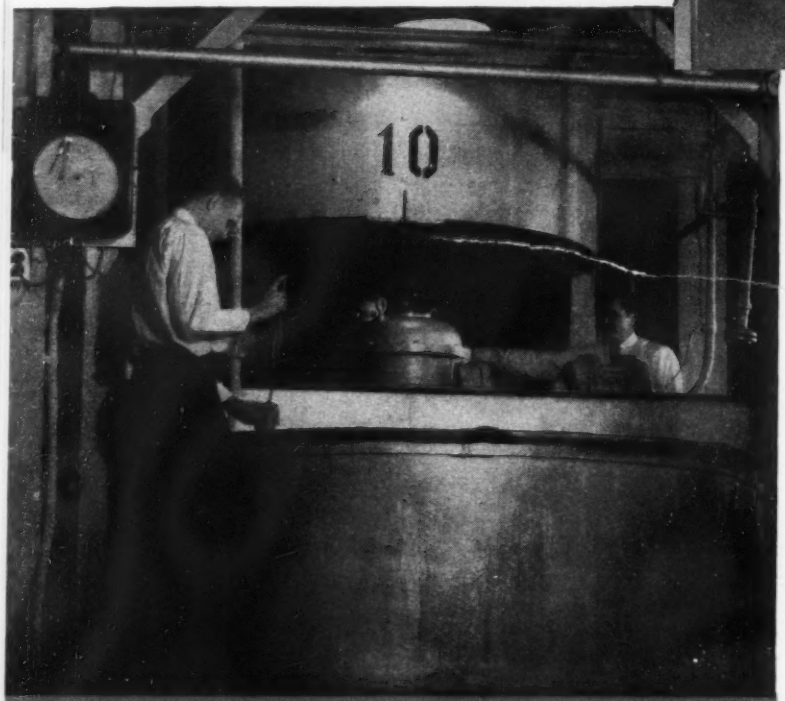
LARGE-SCALE PRODUCTION

to users of

CYANAMID QUALITY CHEMICALS

in the textile industry





(above) One of Cyanamid's modern large-capacity units for the production of textile chemicals. Large-scale production means greatest possible uniformity in chemical supply.

(left) A similar unit in another Cyanamid plant. Each step in Cyanamid's volume production methods is planned and carried out to deliver highest quality as well.

REGARDLESS of whether the volume required is moderate or in carload lots, chemicals for the textile manufacturing processes should be of a consistently reliable, uniform quality at all times.

The source of supply of textile chemicals... the sulphonated oils, penetrants, sizing compounds, wetting agents and other specialties . . . therefore becomes a primary consideration to the manufacturer in establishing economically dependable processing results.

Cyanamid recognizes this vital part played by chemicals throughout the textile industry. Cyanamid is also aware that the supplies required by the textile industry can best be provided by high-standard volume production, insuring the barrel by barrel uniformity made possible by large batch manufacture. As a result, Cyanamid has set up modern large-scale facilities adjacent to the important centers of textile manufacture.

Cyanamid today is able to assure textile manufacturers that their requirements, both large and small, will be accurately and quickly filled with chemicals of a consistently high quality.

Cyanamid is also prepared to serve textile manufacturers on problems relating to the proper selection of chemicals to meet changing specifications in production... a valuable extra service without charge or obligation that is backed by extensive research and practical field experience.

SULPHONATED OILS; PENETRANTS; SOFTENERS; FINISHES; SIZING COMPOUNDS; DECERESOL* WETTING AGENTS

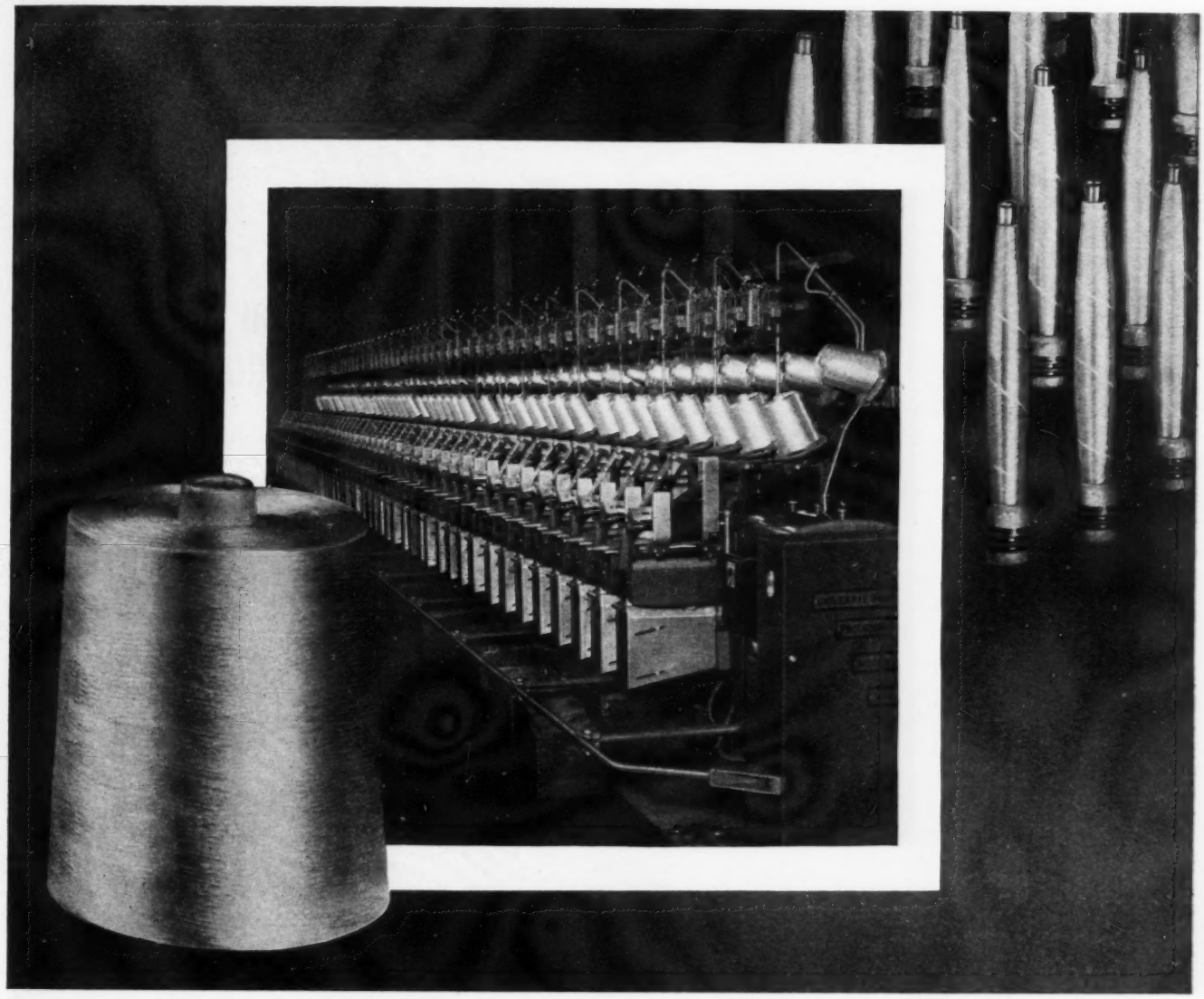
*REG. U. S. PAT. OFF.

AMERICAN CYANAMID & CHEMICAL CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

30 ROCKEFELLER PLAZA · NEW YORK, N. Y.

DISTRICT OFFICES: 89 Broad Street, Boston, Mass.; 401 N. Broad Street, Philadelphia, Pa.; Russell & Bayard Streets, Baltimore, Md.; 3333 Wilkinson Boulevard, Charlotte, N. C.; 850 Leader Building, Cleveland, Ohio; 20 N. Wacker Drive, Chicago, Ill.; Miller Road, Kalamazoo, Mich.; 931 Fisher Building, Detroit, Mich.; 900 Shell Building, St. Louis, Mo.; Azusa, Calif.



Cone to Filling Bobbins at HIGH SPEED, LOWEST COST

The high speed and automatic winding features of the Universal Automatic offer great savings in time and cost — and the bobbins ar giving excellent results in high-speed looms weaving quality fabrics.

The spindle is stopped while the full bobbin is carefully placed in a box in such a way that the rings do not come in contact with yarn. With the full bobbin out of the way, the Traverse Wheel is automatically returned to the base of the bobbin. An empty bobbin is brought into position, the spindle is started, and a flat bunch is built, after which the Thread Guide is permitted to traverse the full length. All this is done without the attention of an operator.

See our catalog in TEXTILE YEARBOOK

UNIVERSAL WINDING COMPANY

PROVIDENCE Boston Philadelphia Utica Charlotte Atlanta

STEER CLEAR OF SUMMER TROUBLE—

Daycos NEVER LET YOU DOWN WHEN THE THERMOMETER GOES UP

All-season Dayco Tempered Roll Coverings never let you down when the thermometer goes up to sizzling heights. Daycos are built, engineered and *proved* to keep rolling on—serene and sure in summer's heat without flattening, distorting or grooving. Unaffected by extremes of temperature, Daycos unvarying properties reduce "down" time—decrease maintenance costs and increase the production of high standard, uniform yarn. All this, and longer life too, Daycos deliver at lower cost-per-month of use.

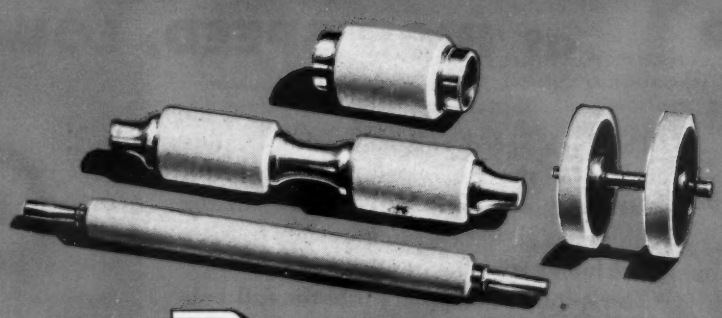
THE DAYTON RUBBER MFG. CO.
TEXTILE PRODUCTS DIVISION,
WAYNESVILLE, N. C. DAYTON, OHIO
The Originators and Pioneers of Dayco Tempered Roll Coverings

GREENVILLE SALES OFFICE
Woodside Building . . . Greenville, S. C.

EXPORT DIVISION
DAYTON RUBBER EXPORT CORP.
38 Pearl Street, New York, N. Y., U. S. A.

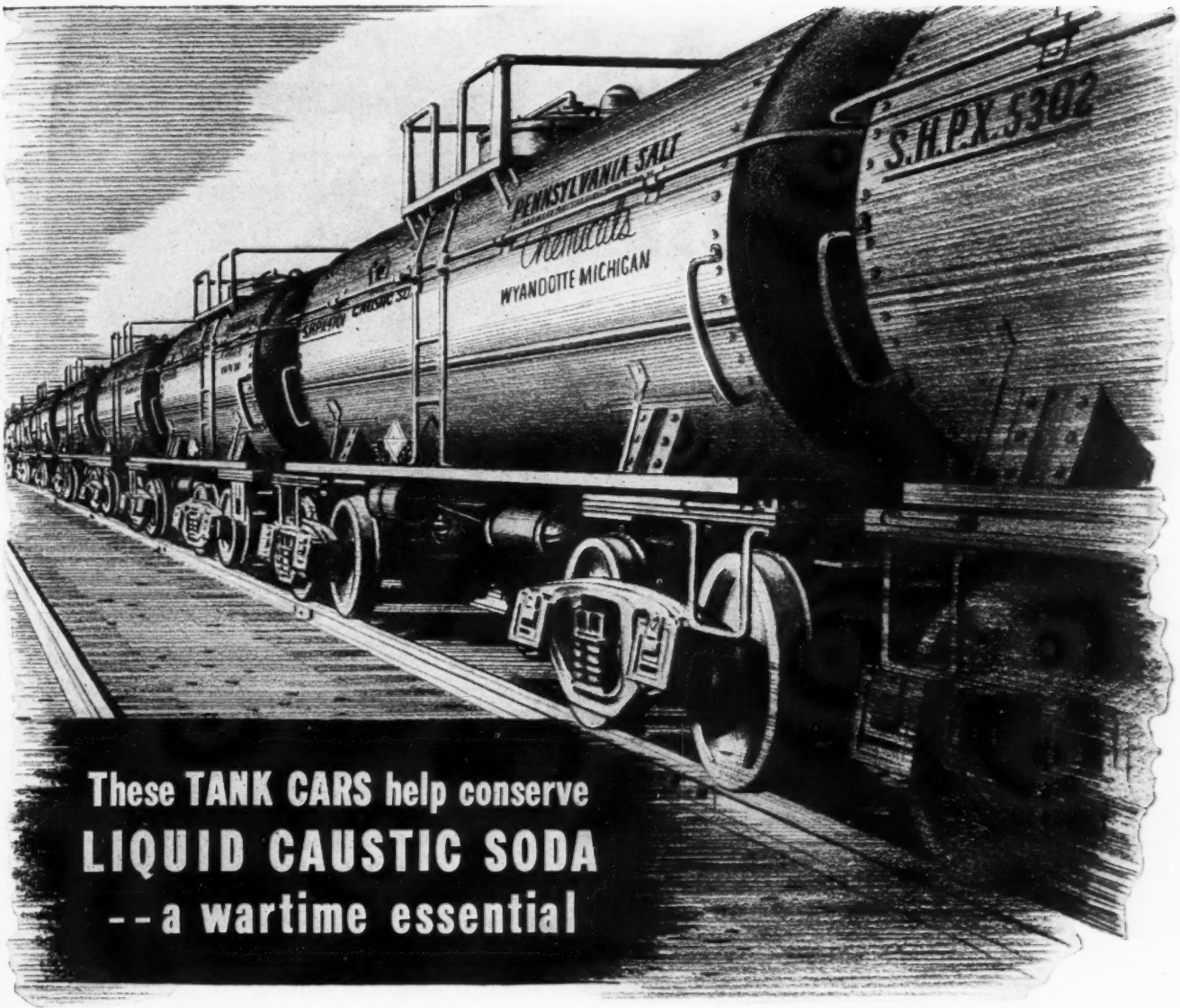
HERE'S WHY—
DAYCO TEMPERED ROLL COVERINGS ARE THE No. 1 CHOICE OF AMERICA'S TOP-FLIGHT TEXTILE MILLS

1. Improved drafting.
2. No grooving—less ends down.
3. Unaffected by tem perature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Not affected by hard ends.
9. Static free.
10. Oil resisting.
11. One piece tubular construction.
12. Produce more uniform yarn.



Dayton
Thorobred TEXTILE PRODUCTS
Dayco TEMPERED ROLL COVERINGS-LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright, 1942, The Dayton Rubber Mfg. Co.



The new Penn Salt tank cars for liquid caustic soda—developed previous to the emergency—are proving a valuable aid in the wartime need to conserve time and essential materials. They are serving in the industrial war on waste by helping users of caustic reduce handling time and costs . . . by making unloading simpler and safer . . . by assuring complete drainage.

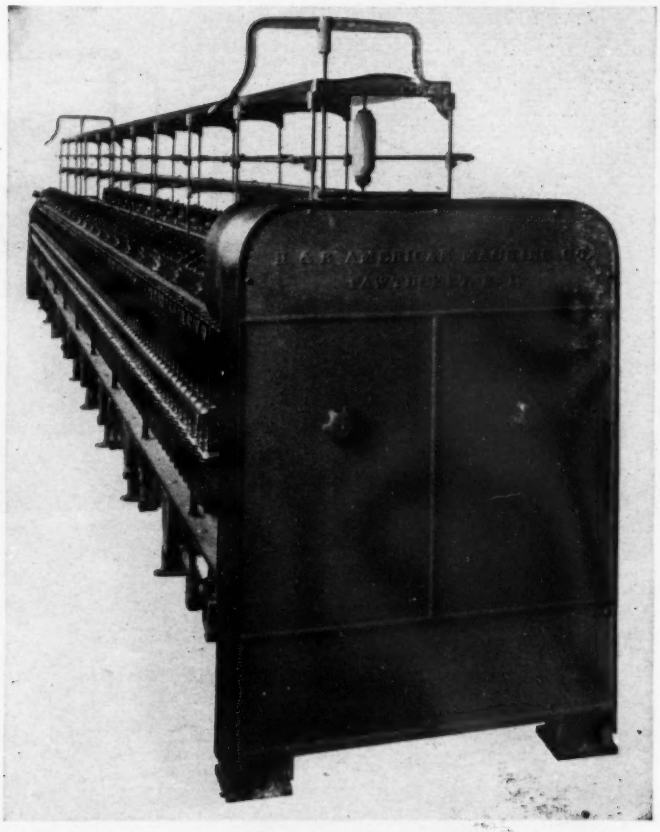
Caustic Soda is playing an extremely important part in the war production program of the textile, paper and chemical industries. Tremendous quantities are urgently required. These demands restrict the amount Penn Salt can deliver for normal uses—but everything possible is being done to supply our customers. You can cooperate during the emergency by conserving caustic soda wherever possible.

PENNSYLVANIA SALT
MANUFACTURING COMPANY
Chemicals

1000 WIDENER BUILDING, PHILADELPHIA, PA.

NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • WYANDOTTE • TACOMA

They're Built



Textile mills throughout the country are making every effort to keep abreast of the times and many of them have modernized their spinning and roving and are taking advantage of the new long draft equipment of the various machinery manufacturers.

These manufacturers never stint on quality; they provide you with the best equipment that technical minds and methods can produce.

It's only fair, both to yourself and the manufacturers, to equip those frames with ring travelers that will give you complete assurance of efficient operation and smooth, strong yarn. That's why, as a matter of sound business logic, we recommend the use of U. S. precision-made, efficiency-tested Ring Travelers—the BEST travelers for the BEST of your spinning frames, whatever their origin.

U. S. Travelers have the uniformity of weight and shape to retain correct tension, they don't overheat, they stay securely on the ring at high speeds, they are durable . . . and there's always

"A Traveler for Every Fibre"

UNIVERSAL RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE

BOWEN PATENTED NE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND
WIRE TRAVELERS

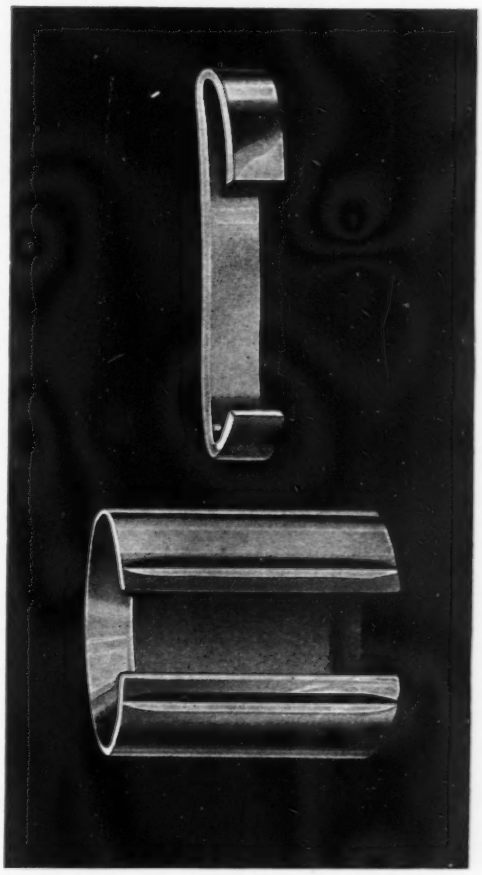
to take the BEST Travelers!

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn; there are no angular edges to flatten the end . . . no split ends in throwing rayon and silk . . . no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos and kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

Ask for information also on the Ne-Bow Patented Vertical Ring Traveler, which has definite advantages for particular uses.

Samples for your exact requirements submitted upon request. Write direct, or contact your nearest representative.

Sealed metal containers guarantee that your U. S. Travelers will reach you in perfect condition, with no tampering or loss in count.



The Bowen Patented Bevel Edge Travelers

U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Southern Sales Representatives:

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STANDARD TRAVELERS

• Another advertisement telling how different American industries are speeding up wartime production •

We've got to keep giving him 13 EXTRA *to win the war*

Taylor Instruments are helping America's planes fly farther faster...

▶ We'll win this war in the air. We'll win it because our planes are powered by the world's best gasoline.

Our planes use high-powered, 100-octane gasoline. Our enemies depend on gasoline which averages 87-octane. This 13-point lead gives an American pilot ⅓ more power from his fuel than his opponent gets. Our boys can climb out of anti-aircraft fire 40% faster . . . fly higher than enemy planes of the same weight . . . get off the ground one-fifth faster. Our 100-octane gas reduces the fuel load so our bombers can carry 20% to 30% more bomb load, or fly farther with heavier armament.

We've got to "fill 'er up" for ourselves and our allies with three times as much 100-octane aviation gasoline as we're producing now—increase production to 5 million gallons a day! We can. We're going to. We're doing it. Taylor Instruments are helping the speed-up.

From pilot plants through commercial plants, Taylor Instruments and Taylor engineers have been a vital help in producing high-octane gasoline. Now *every* gasoline refiner considers instruments essential. Taylor Instruments insure precision processing—automatically accurate and constant control of complicated chemical and physical reactions—complete, dependable uniformity—lower operating costs—more, *better* production.

With Taylor Instruments indicating, recording and controlling temperatures, pressures, liquid levels, rates of flow in all the perplexing, exacting refining operations, America's great oil industry *is* producing the high-grade gasoline and lubricating oil we need—and *can* produce more . . . *more* . . . MORE!

Uncle Sam and our allies are relying on Taylor Instruments to help produce:

100-OCTANE AVIATION GASOLINE
. . . in plants of the biggest producers of this type of fuel.

HIGH-GRADE LUBRICATING OIL
. . . in plants producing the quantities needed by tanks, cars, planes.

BETTER ASPHALT
. . . in plants furnishing this "quick take-off" surfacing for airfield runways and highways.

Without help from the oil industry, America couldn't win the war. Without the aid of automatic control instruments of the types made by Taylor, the oil industry couldn't hope to do its staggering job. Without Taylor Instruments, many another American industry could never have speeded up victory production. Are Taylor Instruments helping you do *your* war work? Have you called in Taylor engineers, to suggest ways of *getting more* out of your present equipment? Are you really tuned up to turn it out? Taylor Instruments will help you *now*—America needs you *now*. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Makers of the famous "Not 1 but 5" Fulscope Controllers.

Taylor
Indicating Recording Controlling
TEMPERATURE, PRESSURE, FLOW *and* **LEVEL INSTRUMENTS**

★ ★ ★ **HELP BEAT 'EM BY BUYING U. S. DEFENSE BONDS** ★ ★ ★

MODINAL* D

NEW DOUBLE-STRENGTH DETERGENT

"MODINAL" D imparts richness of handle and a full, luxurious finish to rayon piece goods. Fabrics are left free of scum, throwing oils and weaving compounds. More level dyeings and better bleaching are obtained in ensuing operations.

Time, steam, labor and water are saved, because the "Modinal" scour reduces rinsing time. This double-strength detergent also minimizes discolorations that often occur when scoured goods dry before dyeing.

Have one of our technical men call at your plant to discuss where and how "Modinal" D improves finishing results and operations.

"MODINAL" *is the trade-mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulphates.*

GARDINOL CORPORATION • General Offices, Wilmington, Delaware

SALES AGENTS

Procter & Gamble, Cincinnati, Ohio

E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware

NINE VOLUMES OF IMAGINEERING

THESE NINE BOOKS are designed to help all men, everywhere, do the Imagineering that improves methods of production and speeds delivery to our fighting men of all war materiel made of aluminum.

HERE AT ALCOA, Imagineering has enabled us to double production and to be well on the way to tripling it, in an amazingly short time. And still the expansion goes on. Swinging immense new plants into top volume at top speed;

building again, and manning that new capacity efficiently . . . This is Imagineering at work for the war.

WE'RE BREAKING RECORDS by sheer determination backed by know-how.

YOU'RE DOING THE SAME. Perhaps your men, many of them new to the ways of working with aluminum, can help you get even more speed through the know-how these books contain.

IN THE DAYS when we made only a driblet of Alcoa Aluminum Alloys, compared to the great flood we are now pouring into the war effort, our engineers could counsel with you personally on fabricating procedures. Today many of these men have been brought back to our plants to join the drive for production. From these books you can get much of the know-how our men used to bring you personally.

OUT OF THESE PAGES, too, will come the exciting Imagineering of the future. Many of the products you will create to meet the new competition, *as well as* millions of jobs for our boys as they come home, will stem from that Imagineering.

Aluminum Company of America, 1939 Gulf Building, Pittsburgh, Pennsylvania.

★ SO MUCH SO SOON ★

ALCOA ALUMINUM

ALCOA

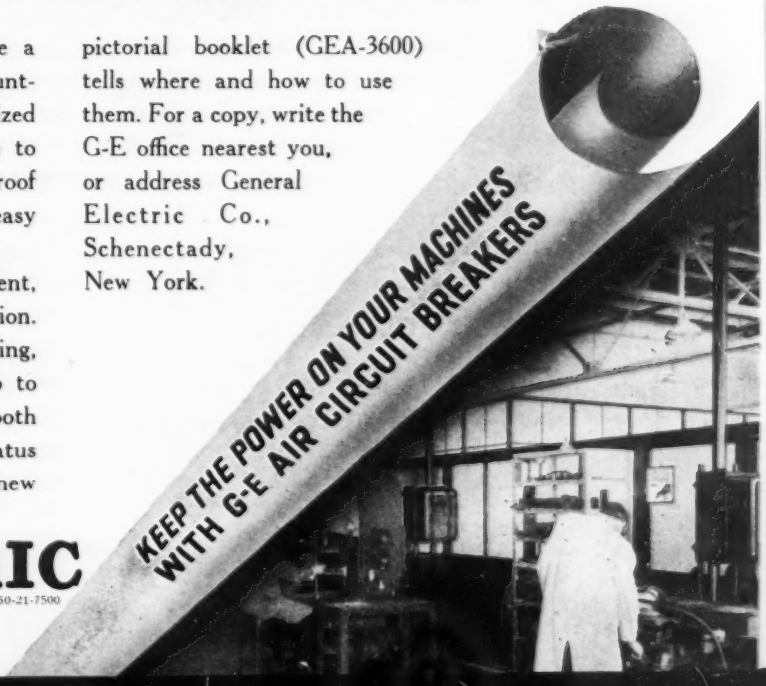
NOW I WON'T HAVE TO CALL YOU EVERY TIME THERE'S A SHORT OR OVERLOAD.
THAT'S RIGHT! JUST TURN THE HANDLE AND THE POWER'S BACK ON YOUR MACHINE.
GENERAL ELECTRIC
AIR CIRCUIT BREAKER

Here's Why YOU'LL Like This New G-E Removable Breaker

WITH this *3-minute* breaker you can re-establish service after temporary faults in less than *one* minute. You can remove and inspect the breaker unit—in safety, away from live parts—in less than *two* minutes. And where load conditions have changed, you can interchange breaker units in less than *three* minutes.

This air circuit breaker is built to meet today's demands for quick installation and provide dependable protection for defense production lines. Its new features include a simple, ingenious method of mounting and a convenient modernized enclosing case, which combine to give you a removable dustproof breaker that is easy to install, easy to operate, and easy to inspect.

Give your production, equipment, and personnel complete protection. Install these breakers in lighting, power, and motor circuits—up to 600 volts. They will protect both the circuit wiring and the apparatus connected to the circuit. A new pictorial booklet (GEA-3600) tells where and how to use them. For a copy, write the G-E office nearest you, or address General Electric Co., Schenectady, New York.



GENERAL ELECTRIC

860-21-7500

THE BREAKER WITH THE DISCONNECT FEATURE

RODA — High grade gas, by-product and steam coal from Wise County, Va., on the Interstate Railroad.

DENDRON — High grade gas, by-product, steam and domestic coal from Wise County, Va., on the Interstate Railroad.

STONEGA — High grade, high volatile steam and by-product coal from Wise County, Va., on the Interstate Railroad.

PREMIX STOKER — A laboratory controlled product blended to meet exacting stoker requirements. From Wise County, Va., on the Interstate Railroad.

COKE — Roda and Stonega from Wise County, Va., and Connellsville Coke from Pennsylvania.

CRITERION COAL — High grade gas, by-product, steam and domestic coal—Pittsburgh seam from Irwin Basin, Westmoreland County, Pennsylvania, on the Penna. Railroad.

CROZER — Genuine Third Vein Pocahontas from McDowell County, W. Va., on the Norfolk & Western Railroad.

Admiralty Coal — Genuine New River Smokeless, Beckley or Sewell seam from Raleigh County, W. Va., C. & O. and Virginian Railroads.

Old Kentucky — Hazard No. 4 and No. 7 steam and domestic coal from Wiscoal, Knott County, Kentucky, on the L. & N. Railroad.

GENCO — Steam and domestic coals from a number of producing districts.

ANTHRACITE — Premium and standard qualities in the entire range of Anthracite burning characteristics.

Capable engineering personnel and the experience gained through long and varied marketing activity assures proper application of one of the above brands and effective servicing of any fuel requirement.

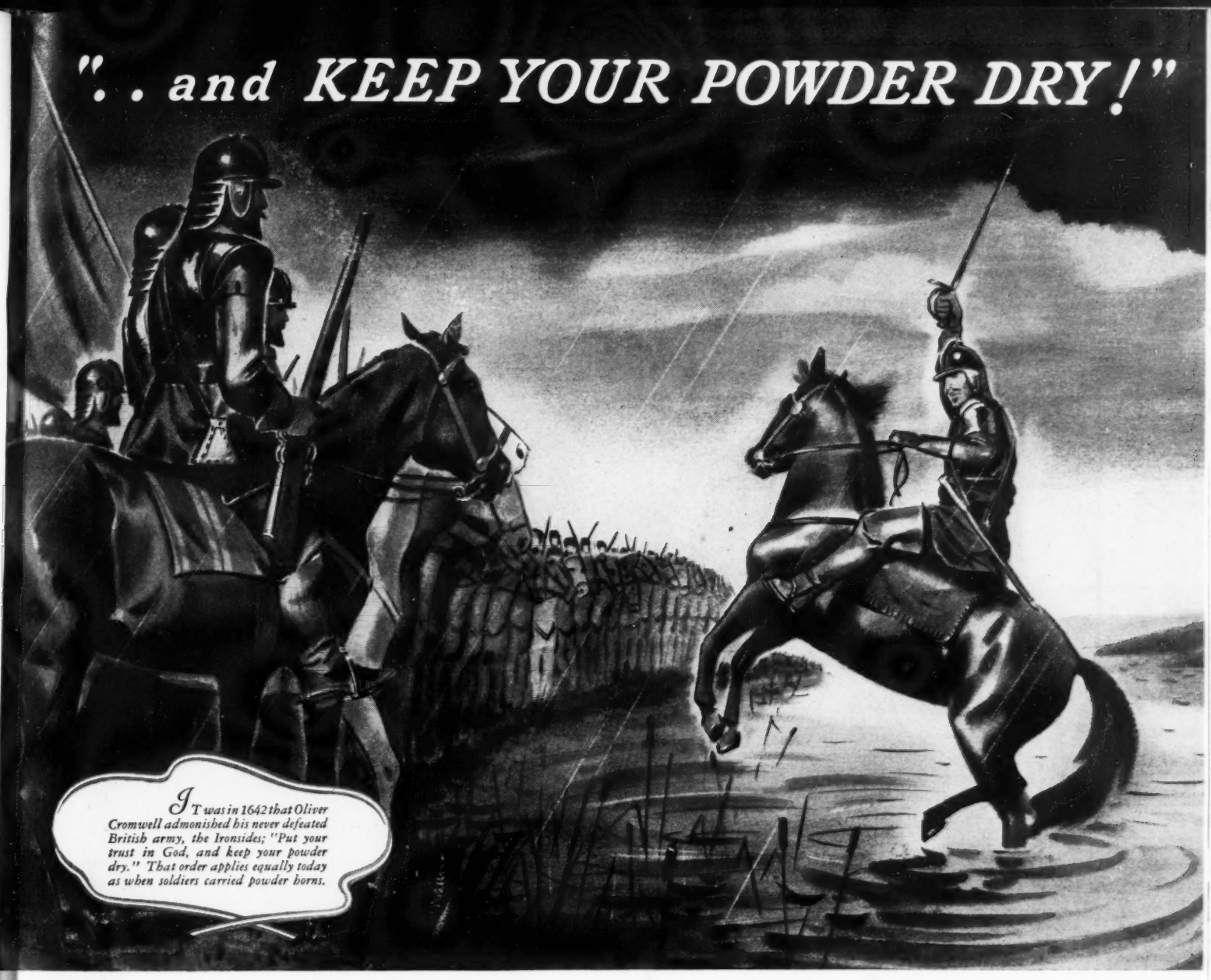
General Coal Company

123 SOUTH BROAD STREET . . . . . PHILADELPHIA, PA.

Branches

BLUEFIELD, W. VA.
BOSTON
BUFFALO
CHARLESTON
CHARLOTTE, N. C.
CINCINNATI
DETROIT
NEW YORK
NORFOLK
PITTSBURGH

". . and KEEP YOUR POWDER DRY!"



IT was in 1642 that Oliver Cromwell admonished his never defeated British army, the Ironsides; "Put your trust in God, and keep your powder dry." That order applies equally today as when soldiers carried powder horns.

. . . FIBREEN is Keeping America's "Powder" Dry on Land and at Sea—

Powder, today, means shells, grenades, and bombs—and also planes, tanks, food, clothing, radios, range finders, surgical equipment, medicines and chemicals, electrical supplies; in fact, all the complicated equipment of modern warfare.

Damage to any of this material while in storage or in transit, while exposed on shipping platforms or yards, at docks or at supply dumps, can be just as disastrous, today, as water in the powder horns of Cromwell's musket men in 1642.

FIBREEN is doing its part in providing safe packing and protection for goods of war. It's tough and strong. It's waterproof. Used as a liner or wrapping, it furnishes vital protection, guarding against damage by rain, dirt, sea water, salt air, and long exposure to all kinds of weather from extreme heat to freezing cold.

FIBREEN is a pliable, rugged paper—reenforced by wire-tough, closely spaced fibres running crosswise and lengthwise — embedded in two layers of asphalt, between two layers of strong kraft. It's inexpensive—an effective replacement for packing fabrics and materials no longer available.

FIBREEN is available to those in essential industries. If your product is in this class, write explaining what you make, and how it is now packed. We'll try to help you.

THE SISALKRAFT CO.

Manufacturers of Sisalkraft, Fibreen, Sisal-X, Sisaltape and Copper-Armored Sisalkraft.

205 W. WACKER DRIVE · CHICAGO, ILL.
NEW YORK SAN FRANCISCO LONDON SYDNEY

In Canada Write to Alexander Murray & Co., Limited, at Montreal · Toronto · Halifax · Saint John · Winnipeg · Vancouver

FIBREEN
EFFECTIVE *Protection* IN TRANSIT—
IN STORAGE—FOR EMERGENCY USES

SERVING INDUSTRY, CONSTRUCTION AND AGRICULTURE THROUGHOUT THE WORLD

Photo by U. S. Army Signal Corps.

See what's happening? Cotton and Wool consumption is shooting skyward *and all of it must be processed by card clothing.* ★ Tests in hundreds of mills prove the value of Tufferized Card Clothing—both in better product and greater production. ★ During these times it is our job first to help you get as much as possible out of your present equipment. Next we must make every effort to see that you get new equipment when the need is apparent.

★ Right now our representatives have much to give of accumulated experience. Ask them to check over your equipment so you may profit by their suggestions.

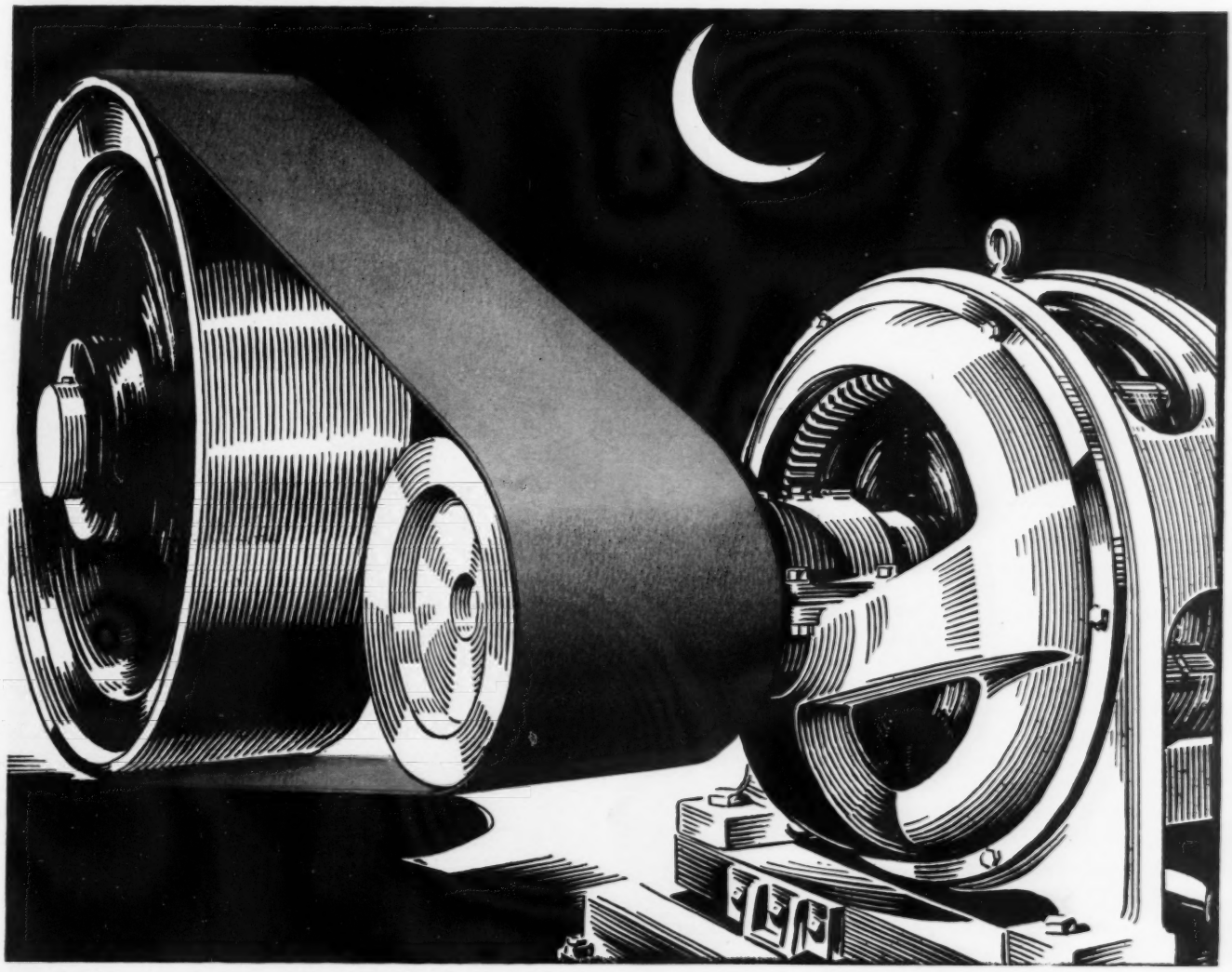
TUFFER CARD CLOTHING

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2



You gotta be tough.. for this 3-shift stuff!

Continuous operation puts a terrific strain on all machinery and equipment —but particularly on *belting!* A belt has "gotta be tough" to stay in there pitching, hour after hour, shift after shift, month after month—particularly under the extreme speed and rapid-flexing imposed on short-center drives.

PIVOTAN leather belting is a *brand new type* of leather belting, specially designed to withstand the grind of continuous operation. A new tanning formula and rigid laboratory control enable us to BUILD long-wearing and rapid-flexing qualities into it. PIVOTAN will help you maintain production schedules.

PIVOTAN

Rapid - Flexing

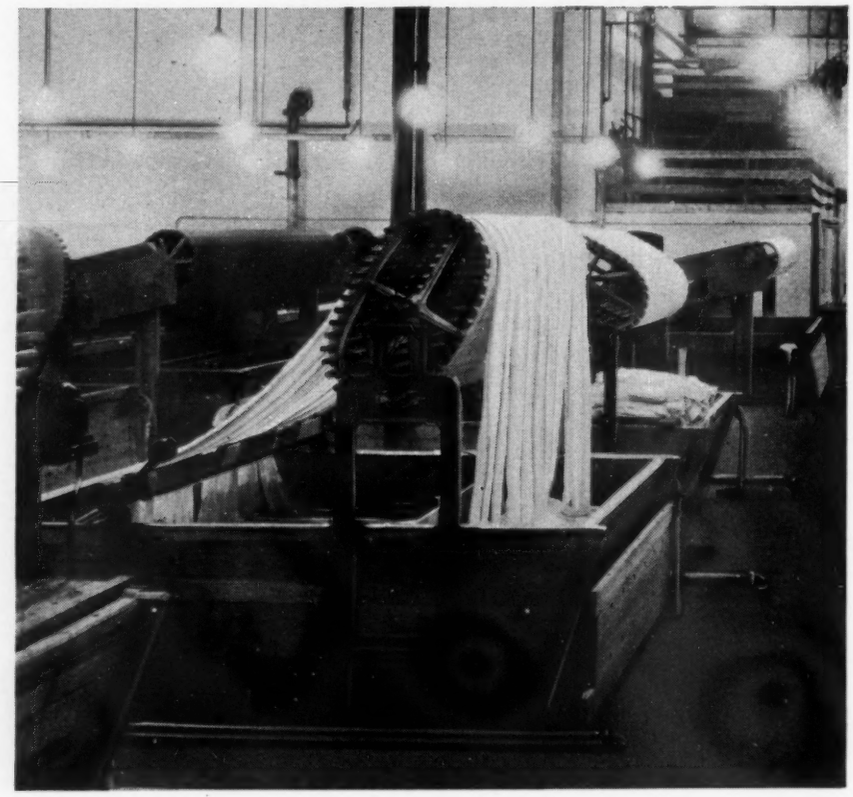
LEATHER BELTING

SOUTHERN BELTING COMPANY ★ ATLANTA

Leather Belting	Rubber Belting	V-Belts and Sheaves	Paper and Metal Pulleys	Rockwood-Southern Pivoted Motor Drives

There's an ARMOUR SOAP *for every job*

"Custom-Made" to do the job your way!



NAME IT— *Armour Has It!*

Just name your requirements in soaps. Whatever your own special techniques and formulas call for, Armour is sure to have the soaps you need. For each textile process, Armour offers — not *one* soap — but *several* for you to choose from.

For dye leveling, rayon processing and wool scouring, fulling and after-scouring . . . Armour offers FOUR different titered soaps . . . each with a different base to suit *your own way* of doing the job.

CERTIFIED SOAP

Vegetable fatty acid base. Available in flakes and solid form.

VERDANT SOAP

Olive characteristics. In flakes, bar and solid form.

TEXSCOUR

Red oil base. In flakes.

PALM SOAP

Palm oil base. Available in chips and solid form.

No matter at what temperature you do cotton scouring, Kier boiling or cotton dyeing . . . there's an Armour high titer soap designed to give you long-lasting, efficient suds.

FLINT SOAP

Tallow base. Titer 41-42 C. In chips and powder.

INDUSTRIAL SOAP

Tallow base. Titer 39-40 C. In chips and powder.

Get Better Results — Consistently — At Lower Cost!

Armour not only gives you the *right* soaps for every job — but the finest quality soaps. They're made from choice, selected raw materials and chemically controlled through every step of their manufacture. Uniformly high in quality, thoroughly standardized, Armour's Soaps are consistently high in performance. And that means you are assured of better results — greater economy — day after day!

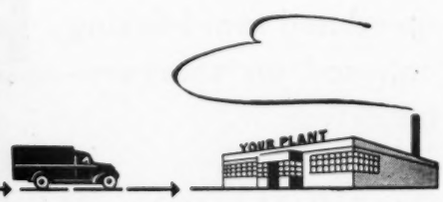
Next Time — Order Armour Soaps!

Phone, wire or write Armour and Company today and a representative will gladly show you how Armour's "Custom-Made" Soaps can improve production and cut soap costs in your plant.

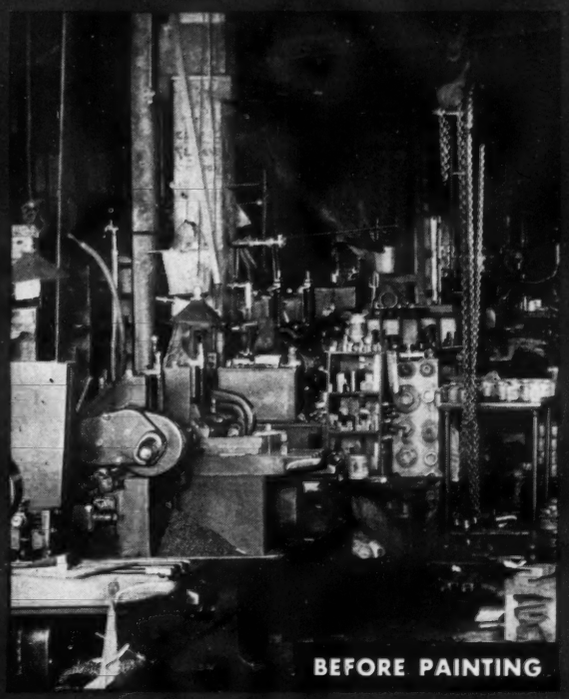
ARMOUR and COMPANY

INDUSTRIAL SOAP DEPARTMENT

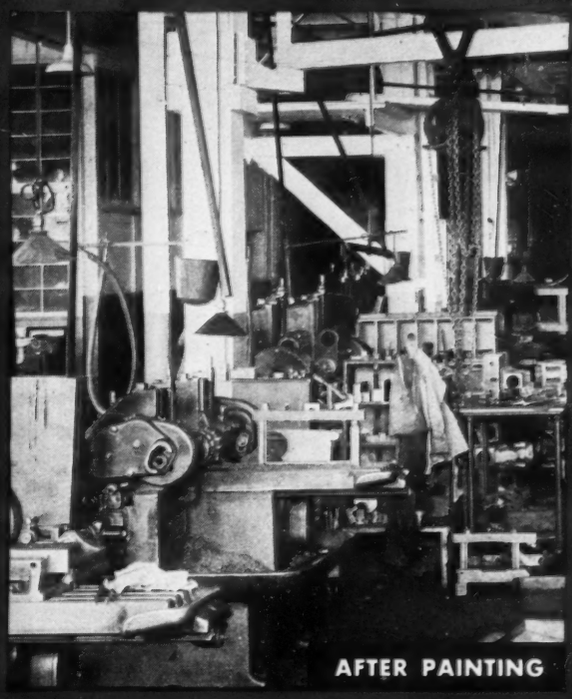
1355 WEST 31st STREET, CHICAGO, ILLINOIS



NO WAITING! 350 ARMOUR BRANCH WAREHOUSES INSURE QUICK DELIVERY OF YOUR ORDER!



BEFORE PAINTING



AFTER PAINTING

PAINT IS PART OF YOUR LIGHTING SYSTEM

Says the Better Vision Institute

PAINTED WHITE your ceilings and walls help speed production by making your lighting system more efficient.

You can paint your plant without interrupting production schedules even though you are operating on a 24-hour basis. A trained Barreled Sunlight Representative can tell you how. He is thoroughly equipped to help you work out an efficient, economical painting program for your plant. For information on this valuable Barreled Sunlight Service, write U. S. Gutta Percha Paint Co., 8-E Dudley Street, Providence, R. I.

GOOD LIGHT MEANS:

- FAST PRODUCTION
- ACCURATE WORK
- EASY INSPECTION
- GREATER SAFETY

Get BETTER LIGHT with GOOD WHITE PAINT

BARRELED SUNLIGHT

INDUSTRIAL WHITE-PAINT SPECIALISTS FOR 40 YEARS

TOP WARTIME PRODUCTION REQUIRES FIRST CLASS MACHINERY MAINTENANCE

WITH cotton mills running 24 hours a day, six or seven days a week, there is very little opportunity to clean machinery and give it the proper attention, and consequently there will be greater need for overhauling and replacing worn parts. Picking and opening machinery, particularly, requires frequent and careful cleaning on account of the dusty nature of the stock that it handles, and mills which are running around-the-clock will need more picker maintenance than ever before.

While very little new machinery will be available until after the war, old, worn picking machinery can be made to perform as good as new with proper rebuilding. We have specialized in this work for years and are particularly well fitted to rebuild old picking and opening machinery.

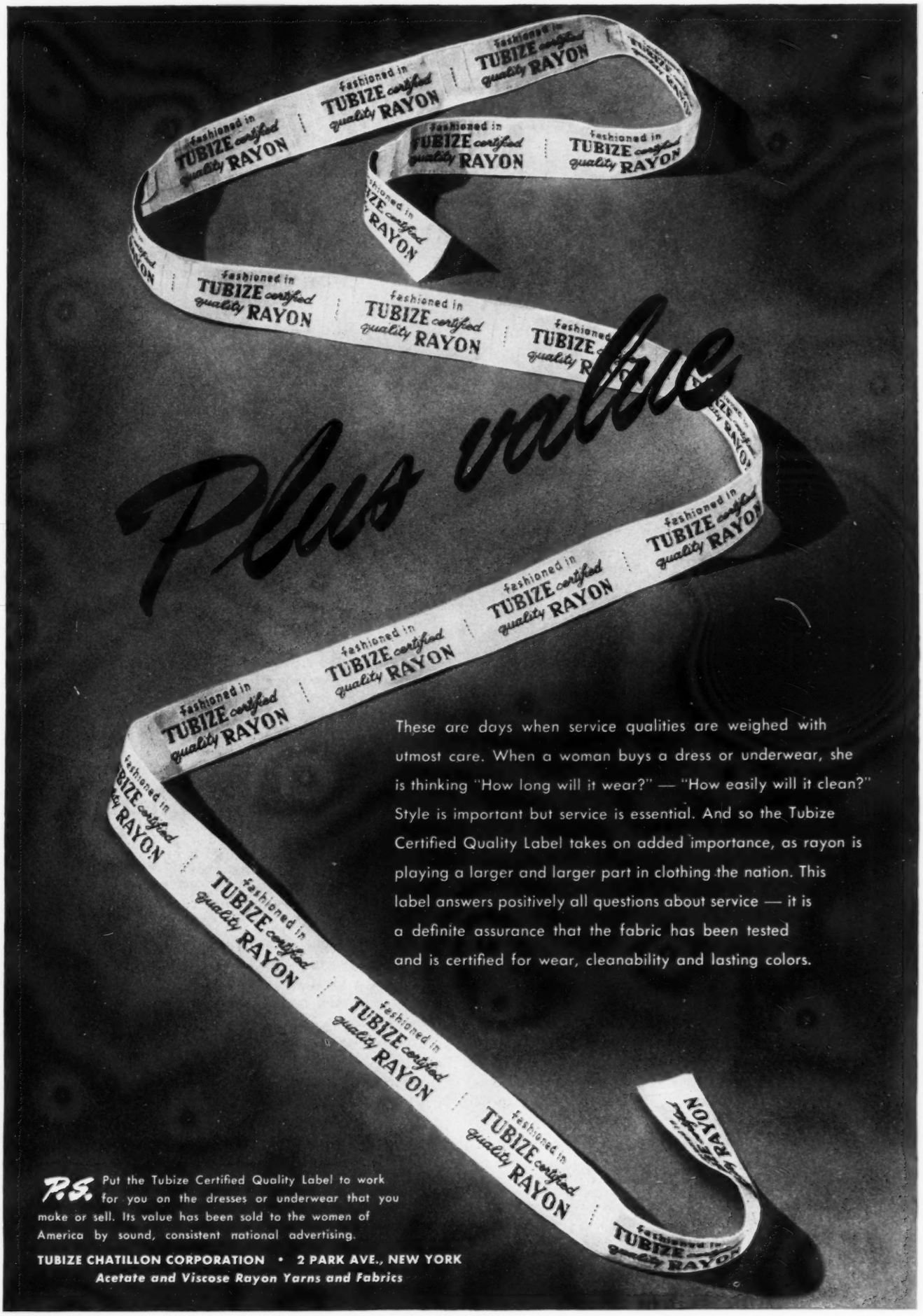
We keep on hand for immediate delivery a large stock of repair parts for pickers. A telegram or telephone message, in an emergency, will generally have the needed picker part at the mill within 24 hours from the time you call or wire us.

At this time we suggest that you check your stock room and see that a reasonable quantity of picker repair parts are in stock, since a picker failure can often shut down more other machinery than the failure of almost any other equipment.

We can not only take care of your needs for supplies, but can often rearrange existing equipment to produce better work.

AldricH MachinE

Greenwood, WorkS South Carolina


Plus value
fashioned in TUBIZE certified quality RAYON
These are days when service qualities are weighed with utmost care. When a woman buys a dress or underwear, she is thinking "How long will it wear?" — "How easily will it clean?" Style is important but service is essential. And so the Tubize Certified Quality Label takes on added importance, as rayon is playing a larger and larger part in clothing the nation. This label answers positively all questions about service — it is a definite assurance that the fabric has been tested and is certified for wear, cleanability and lasting colors.
P.S. Put the Tubize Certified Quality Label to work for you on the dresses or underwear that you make or sell. Its value has been sold to the women of America by sound, consistent national advertising.
TUBIZE CHATILLON CORPORATION • 2 PARK AVE., NEW YORK
Acetate and Viscose Rayon Yarns and Fabrics

"My parts bill is much lower with Gulf Quality Lubricants"

. . . says this Overseer of Weaving

Actual photo of a Gulf engineer consulting with Overseer of Weaving on loom lubrication.

"Proper lubrication has also reduced our loom fire hazard"

"I HAVE tangible evidence of better lubrication with Gulf quality oils and greases," says this Overseer of Weaving. "First, our loom parts bill is *way down*—which is mighty important, with parts so hard to get lately. Second, we haven't had a loom fire in months, for the Gulf grease on the cams stays right where it belongs."

There are good reasons why textile mill men report important benefits with Gulf higher quality oils and greases in service. These lubricants are scientifically manufactured to the most rigid specifications for stability and endurance. Thus they stand up and provide a tough film of highest lubricating value even under severe operating conditions—conditions which often result in breakdowns and interruptions to production schedules.

Does any department in *your* mill report frequent delays from mechanical troubles? Play safe—ask a Gulf engineer to check over your equipment and recommend the proper Gulf lubricant for each moving part. The Gulf line of more than 400 quality oils and greases is quickly available to you from 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF OIL CORPORATION · GULF REFINING COMPANY
GULF BUILDING · PITTSBURGH, PA.

★ GULF INDUSTRIAL LUBRICATION ★

Here's *Exactly* Why

The CONCAVE SIDE

Saves Belts-Saves Rubber-Saves Power!

Pick up any V-belt that has straight sides. Bend that V-belt while you grip its side-walls as in the picture above. You will feel the sides of the belt bulge out —as shown in Figure 1 on the right. Clearly, that out-bulge gives the belt a shape that does not fit its sheave groove.

Now look at Figure 2. There you see what happens when you bend a belt that is built with the patented Concave sides. You get a similar change in side-wall shape—but what a different result! The precisely engineered Concave side becomes perfectly straight. There is no out-bulge:—the full side-width of the belt *uniformly* grips the sheave groove wall. This means *uniform* wear—*longer* life—a saving in belts for you, a saving in rubber for the Nation. In addition, this full side-width grip on the pulley carries heavier loads without slippage—another saving of belts and a saving in power too!

Only belts built by Gates are built with the Concave side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.

VALUE HAS NO CEILING—

Every price ceiling established or even talked of, is a challenge to you. A challenge to produce, with restricted materials, the utmost in value that ingenuity and painstaking care can accomplish. Slackness in detail must not be tolerated. For the sake of saving a fraction of a cent a dozen, you cannot afford to take chances on any ingredient, any operation going into your product. And finally you must be alert to maintain the value you have built by marking with the finest transfers you can buy; and by packaging for eye appeal. Kaumagraph Dry Transfers are tops in value — consequently most economical. And they are of the same high quality as always. Kaumagraph lithography also will emphasize the value of your product over the retail counter.

Identification Headquarters

KAUMAGRAPH
Wilmington, Delaware

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

New York Office, 16-22 E. 34th St. · · Representatives in Principal Textile Centers of the World

PROGRESS REPORT:

ARALAC

now used in the manufacture of

Expressing our thanks for the trade's reception of

*ARALAC

LANARA

The Perfect Protein Fibre for Blended Fabrics

Less than six months ago ARALAC had, for the first time, been sufficiently tested in fabrics to warrant its being offered for general textile use.

Now, new as it is, ARALAC has proved its usefulness in many fields . . . and its sphere of service is constantly growing.

We are most appreciative of the warm reception accorded ARALAC by the various divisions of the textile industry.

We are doing all within our power to continue to meet the needs of present customers and to prepare ourselves to serve the growing list of new ones.

With our thanks for your support, goes our promise to contribute our fullest cooperation to all who wish to test the efficacy of this new man-made protein fibre in 1942!

★ T. M. Reg. U. S. Pat. Off.

ARALAC, INC.

Taftville, Connecticut

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

HOW WE BECAME INTERESTED IN SMOKING

We enjoy a good smoke as much as the next fellow. But our interest in smoking has taken a new turn in recent years.

Some time ago, our engineers began studies to find a way to remove tobacco smoke from the air. They knew if they could do that they had a commercially practical solution to the problems caused by all kinds of atmospheric dust and dirt. They experimented with tobacco smoke because its particles are the tiniest of all air-borne matter. After many years of research, they developed the first air cleaner that operated by electricity, and it removed all traces of tobacco smoke.

This extraordinary Westinghouse air cleaner we called the PRECIPITRON*, and for three years now it has cleaned circulating air electrically in stores, offices, radio stations, hospitals, cafes, telephone exchanges.

In the beginning, our engineers didn't dream their pioneering would create dirt-free industries for an America at war. Yet, today that's the all-out, single-purpose job assigned to Precipitron. It has become a war production tool in its own right because of its efficiency and its economy of operation.

Hidden away within ventilating ducts of windowless blackout plants, Precipitron is eliminating industrial haze formed by machine tool coolants. It is reducing maintenance shutdowns for large rotating machinery in steel mills and central stations. Where precision engine parts are machined, Precipitron protects the superfinished surfaces from abrasive air-borne grit and dust. Away from the roar of industry, Precipitron removes atmospheric contamination in serum and blood plasma laboratories.

These are but a few of the jobs electric air cleaning is doing in war industries. We will be glad to tell you more about them and more about the operation of Precipitron itself. Just write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio, for our new folder B-3083.

*Trade-mark registered in U. S. A.

Westinghouse *Precipitron*

This is a BALL BEARING *War!*

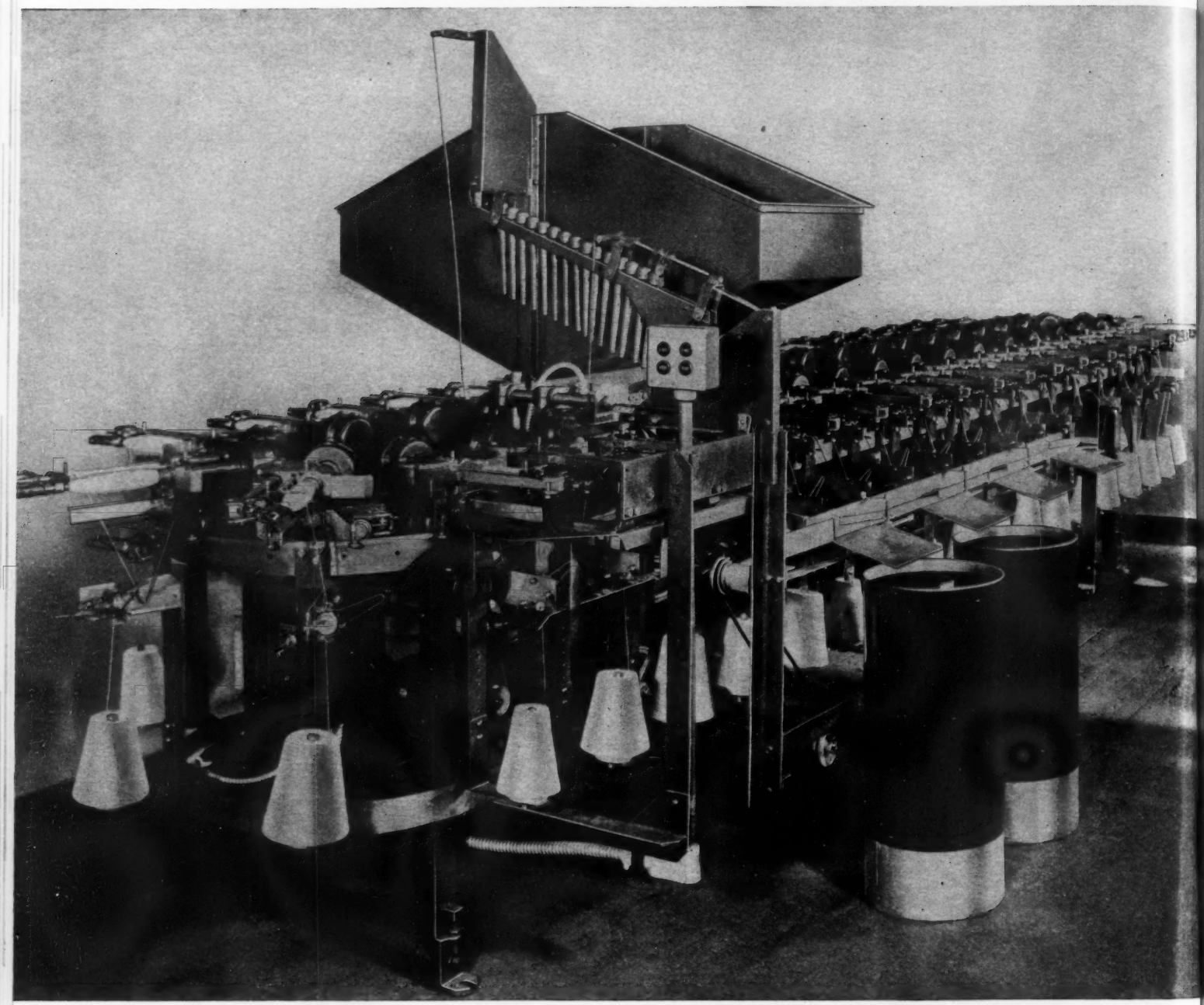
Our modern Army moves on Ball Bearings! It takes more than 2000 to keep a single Flying Fortress in the air – tanks, guns, trucks and other mobile equipment need them literally by the millions! The requirements of Ball Bearings for our Army are almost limitless. Our "front-line" job is to produce them. This is the part Fafnir is playing, *to win the war!* This is why Ball Bearings are sometimes so hard to get for usual commercial purposes.

In the summer of 1941, Fafnir added tens of thousands of square feet of manufacturing space – and many more thousands of square feet were added in the latter part of 1941. On June 1st, 1938, Fafnir had 1148 employees – the figure has increased several hundred percent. The Fafnir plant is working 168 hours per week. *This is what Fafnir has done,* to meet the demands for Ball Bearings that are sorely needed by our fighting forces . . . and to furnish you with as much of your bearing requirements as possible under the present conditions. The Fafnir Bearing Company, New Britain, Connecticut.

Photos by U. S. Army Signal Corps

FAFNIR
BALL BEARINGS

AUTOMATIC LOOM BOBBIN WINDER



FULLY AUTOMATIC OPERATION---
DUMP EMPTY BOBBINS IN HOPPER;

The machine does the rest

Will handle four or more colors or counts at once; sorting full bobbins into separate cans

The spindles travel by one automatic head, operating up to 100 spindles

LOWEST INVESTMENT COST ★ LOWEST LABOR COST

Write today for information

ABBOTT MACHINE COMPANY

Wilton, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

Cotton Freshness FOR FIGHTING TRIM

Hitch Your Sports Clothes Promotions to This Merchandising Star

This full-page message in the June issue of Woman's Home Companion *(out May 20) will command attention in three and one-half million American homes. With timely editorial background, it will be the spearhead theme in sports clothes promotion for leading stores throughout the nation. Make it yours.*

Throughout the nation, the selling power of "COTTON FRESHNESS for Fighting Trim" is rapidly gaining momentum. This war-time advertising slogan of 12,000,000 cotton farmers and the American cotton industry gives a FRESH reason for increased emphasis on the world's most important fibre.

A series of monthly promotions backed by pages of advertising in national magazines paves the way for every retail store to hitch its sales wagon, profitably, to this new advertising star. The widespread tie-in by retail stores with the May promotion of cotton dresses, headed by *Good Housekeeping Magazine*, is indicative of the major role this timely theme will continue to have in retail selling of cottons.

TO SELL MORE SPORTS CLOTHES *Get Fresh* IN YOUR ADVERTISING

Take advantage of these free helps to tie in your window and store displays, and your advertising, with this nation-wide promotion of "COTTON FRESHNESS for the fun that keeps you fit."

Newspaper layout with mats for tie-in with magazine promotion. Designed to head up your sports clothes advertisements in page or smaller space.

Easel mounted copy of advertisement in June issue of *Woman's Home Companion* shown at right.

Window Poster. This two-color poster (size 19x24) is a key display piece for this and future cotton promotions. Keep it on hand. Use it often.

Cotton Freshness FOR FIGHTING TRIM

Mat of logotype slogan carried in all magazine advertisements. Available in 2-column, 4-column, and 6-column widths.

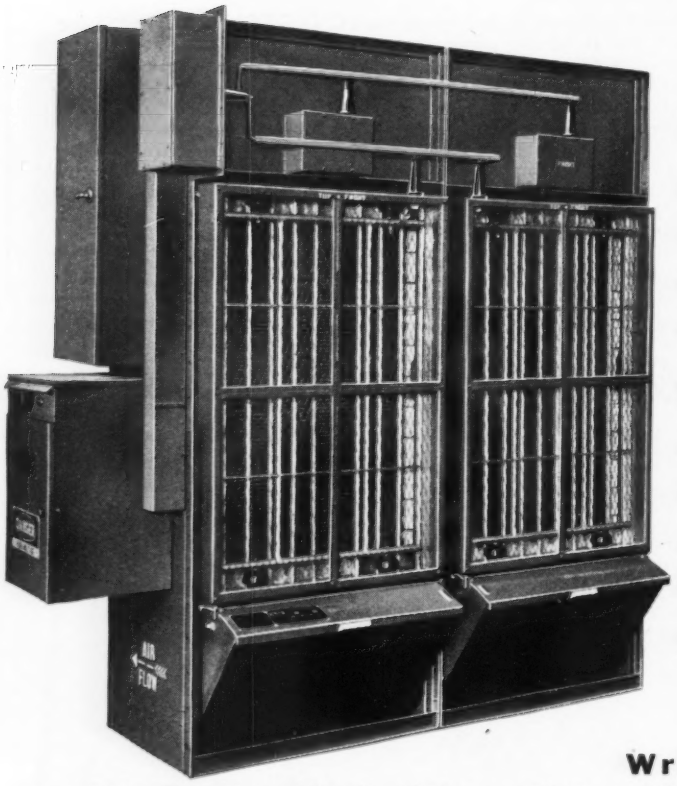
Electrotype of American cotton emblem—(one-half inch, inch, and one and one-half inch) for use on labels and tags, and in all printed advertising.

Radio shorts in script form for use in regular radio advertising or as spot announcements.

TO SELL MORE COTTON *Get Fresh* **IN YOUR ADVERTISING**

NATIONAL COTTON COUNCIL OF AMERICA • COTTON TEXTILE INSTITUTE

CLEAN AIR will make the TEXTILE INDUSTRY'S all out war effort *more* EFFECTIVE

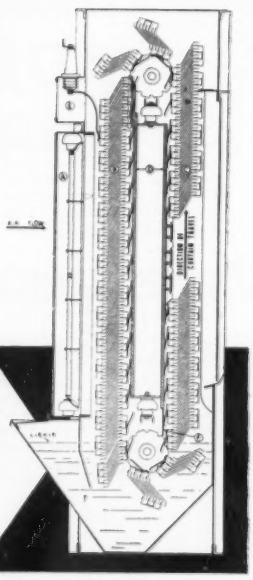


As a result of the universal recognition which clean air has today as an industrial necessity, war production plants have installed American Air Filters for the elimination of atmospheric dust to further increase their production efficiency.

The Electro-Matic filter shown here is one of several types of AAF filters which are in general use by textile mills all over the country where thousands of dollars have been saved by reducing soilage and loss caused by dust, soot and smoke particles.

Write for information on the Electro-Matic filter which collects smoke, soot and dust electrically and cleans itself as it cleans the air.

The exclusive self-cleaning feature incorporated in the Electro-Matic air filter makes shut-downs and interruptions for cleaning unnecessary. Shown at the right is a cross section of the Electro-Matic filter showing how the continuous filter curtain is washed free of collected dust, soot and smoke particles automatically.



AMERICAN AIR FILTER COMPANY, Inc.
Incorporated
275 Central Avenue, Louisville, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

ELECTRO-MATIC
Self Cleaning
ELECTROSTATIC AIR FILTER

Filter curtain passes thru Viscous bath releasing impinged dust and smoke particles which settle to bottom of reservoir.

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Oblique-Groove Eadie Oil-lubricated Ring

Eadie Multiple-groove Greased Ring

Eadie Laced Wick Oil-lubricated Ring

Standard DIAMOND FINISH *Flange Ring*

Curved Web Ring originated by DIAMOND FINISH

WE MAKE ALL TYPES OF RING HOLDERS

Cast Iron Holder with Pin Type Cleaner

Stamped Holder with Integral Traveler Cleaner

Textile Conversion Order Seen Meeting E... n, Wartime Needs

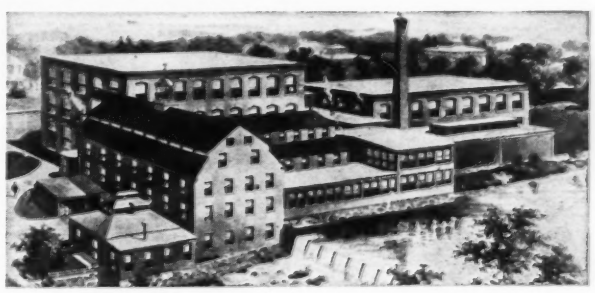
MILLS ORDERED TO HALVE COTTON GOODS IN 60 DAYS

Let us help you meet the Ring Problems!

Conversion is sure to bring many problems. We believe you'll have one problem less, if you call on DIAMOND FINISH to advise you on any changes involving ring practice. There is a distinct advantage to you in the fact that we offer the most COMPLETE ring service. We make all standard styles, plus a variety of speed rings not otherwise obtainable. As a result, our advice to you is based on broad and first-hand knowledge of ALL the phases of modern ring practice. You arrive at the ideal ring specifications surely and speedily. Let us work with you — for Victory!

WORLD'S LARGEST RING-MAKING PLANT

Since 1873 we have devoted our entire efforts to the specialized job of making rings to suit every fibre and method. The famous "DIAMOND" FINISH has demonstrated its ability to start easily in all weathers, and to wear smoothly and evenly through a long life. As for service, our extensive capacity usually enables us to work out a delivery schedule that fits in smoothly with the mill's installation program. Call on us!



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Makers of Spinning and Twister Rings since 1873

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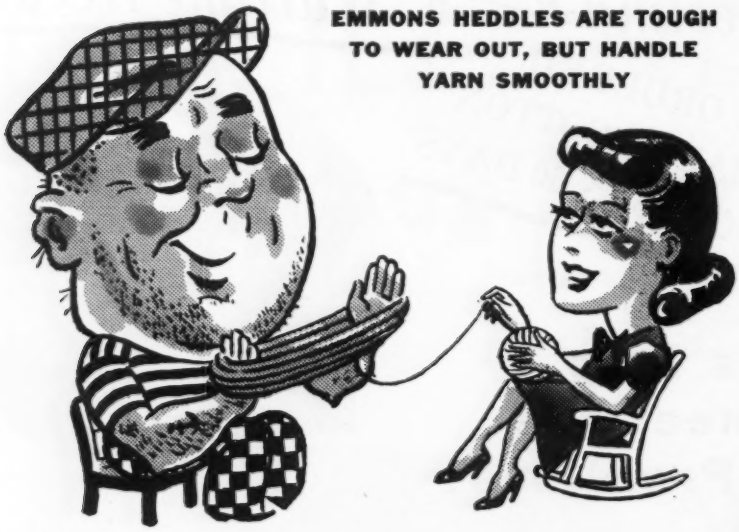
World's Largest Ring-Making Plant

Treats Yarn Like a Gentleman

EMMONS HEDDLES ARE TOUGH TO WEAR OUT, BUT HANDLE YARN SMOOTHLY



The *toughness* of an Emmons heddle cuts replacement costs. High tensile strength and durable rust-resistant coat keep it on the job longer.

The *smoothness* of an Emmons heddle eye guards production and cloth quality. Extra polishing of streamlined surfaces prevents yarn chafing and warp breaks.

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Write "Emmons" in front of your next order for steel heddles to get the *gentle* strength that saves replacement costs and keeps yarn strong and full.

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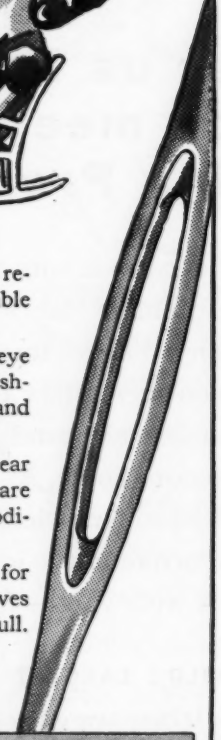

YOU CAN *SEE* THE EXTRA SERVICE

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Be Certain . . . Buy Certified

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Lawrence, Mass. **Charlotte, N. C.**

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EMMONS

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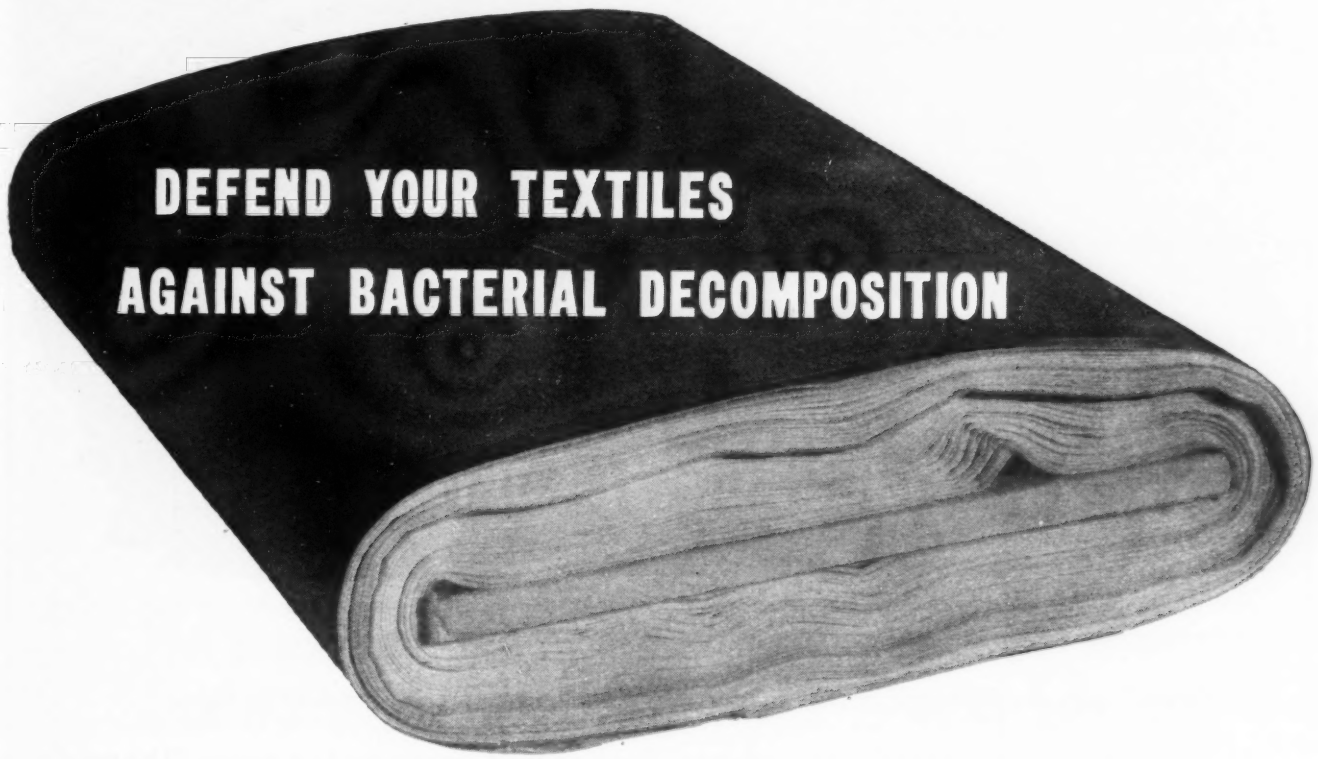

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SELF-LOCKING
HOLLOW SET SCREWS

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Just tighten up as usual and they stay put—won't shake loose.

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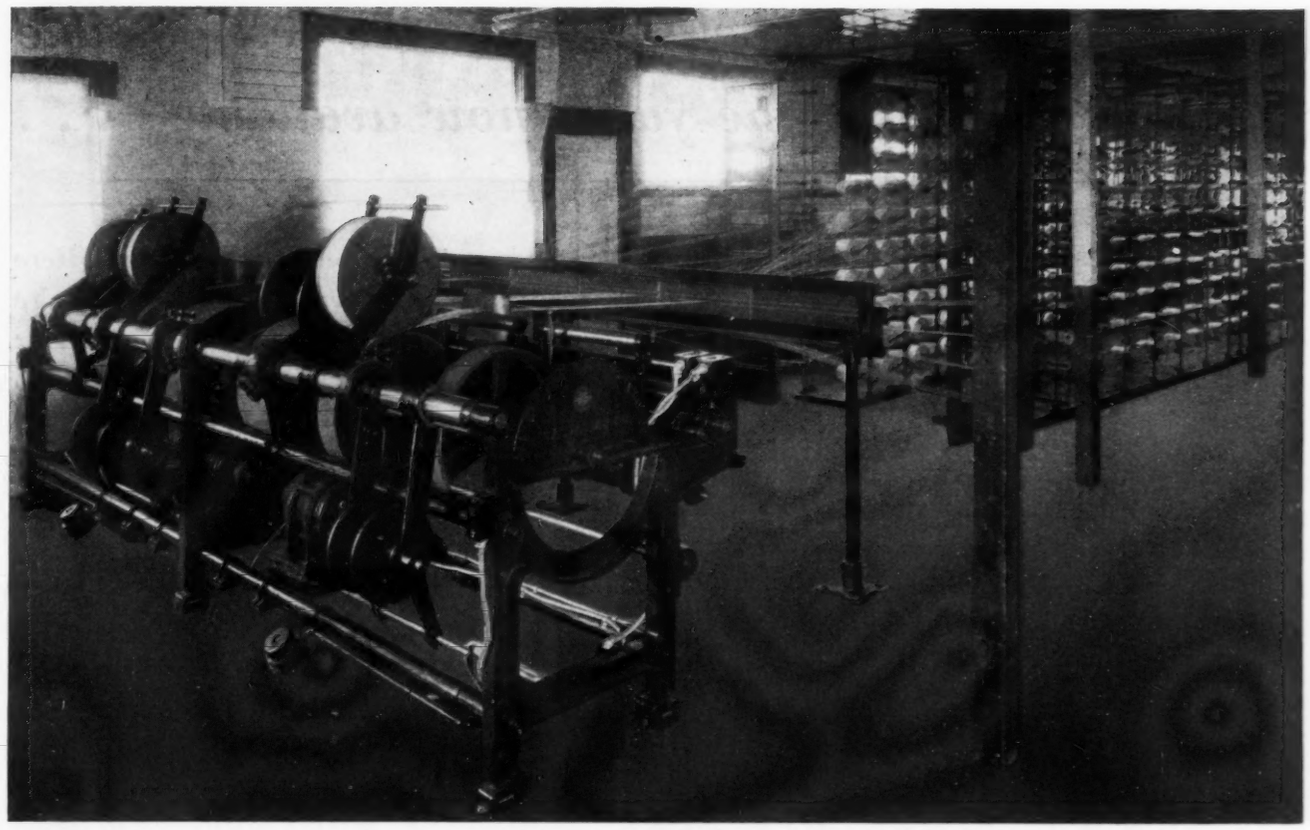

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NARROW FABRIC WARPER

With Eyeboard Stop Motion and Magazine Cone Creel

This machine can be built with any number of drums, with the drums of varying widths to make beams of varying widths at the same time.

Equipment with the machine includes a traverse motion for traversing a warp of a small number of ends on the beam--or the beams can be made in the flat.

For detailed description and prices write or wire--

Cocker Machine & Foundry Co.

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BUILDERS OF COMPLETE WARP PREPARATION EQUIPMENT

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AMERICA'S hosiery manufacturers can't wait. They need facts—need them now—in order to produce satisfactory rayon stockings.

That's why we have devoted a section of our Textile Unit, and a staff of skilled technicians, to an all-out drive on the hosiery problem. Here, we have made telling progress. For example, from this work has come Avconit No. 1, the new sizing material which has already gained widespread acceptance. Mill men are enthusiastic about Avconit. They tell us that it really makes high-twist rayon behave, that it cuts press-offs to a fraction.

4-PLY SERVICE

tackles the Hosiery Problem...

1 **FIBER RESEARCH**—Helps you get the right yarns.

2 **FABRIC DEVELOPMENT**—Helps you design new fabrics.

3 **MILL TECHNIQUE**—Helps solve mill problems.

4 **SALES ASSISTANCE**—Helps sell finished fabrics.

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1 CORRECT TWIST. A series of tests is now going on to determine the relation between twist and tensile strength, resilience, dullness and sheerness. When this work is completed, it will become a simple matter to select the best twist for any desired hosiery qualities.

2 STYLING FOR WEAR. The wearing qualities of rayon stockings can be improved by correct styling with regard to welt, heel, toe, and foot reinforcements. Extensive wear tests are now going on.

3 YARN RECOMMENDATIONS. Although the types and deniers of yarns now available are limited, experimental work is now in progress to determine which yarns are best suited for hosiery purposes.

4 UNIFORM KNITTING. Variations in machine speeds, tensions, and operating technique are under experiment to determine the best methods of producing a uniform, flawless-appearing fabric.

Of course we don't know all the answers. We never will. But you can be sure that this research program has already produced much information of value to you, and in this it will continue. So, if your problems have anything to do with rayon yarns, bring them in to rayon headquarters—to American Viscose Corporation. Our 4-PLY SERVICE gets results!

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PRODUCERS OF CROWN *RAYON YARNS AND STAPLE FIBERS*

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FROM THESE MAPLE TREES COME TWO
VITAL PRODUCTS:

BOWEN-HUNTER BOBBINS

to help you to keep even tension in your drawing

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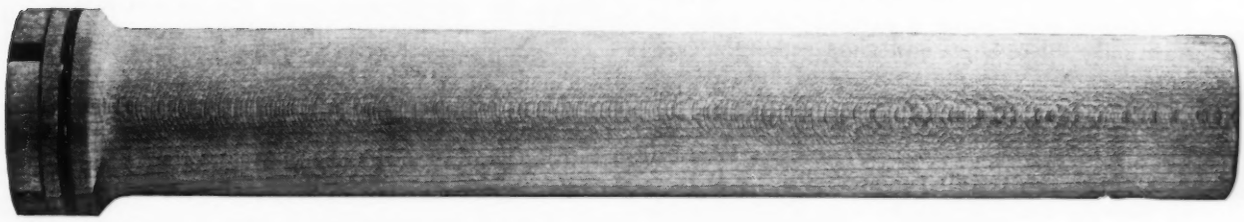
to help relieve the present sugar rationing tension



CARD ROOM, AUTOMATIC LOOM,
FILLING, WARP AND TWISTER BOBBINS.

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East Corinth, Vermont

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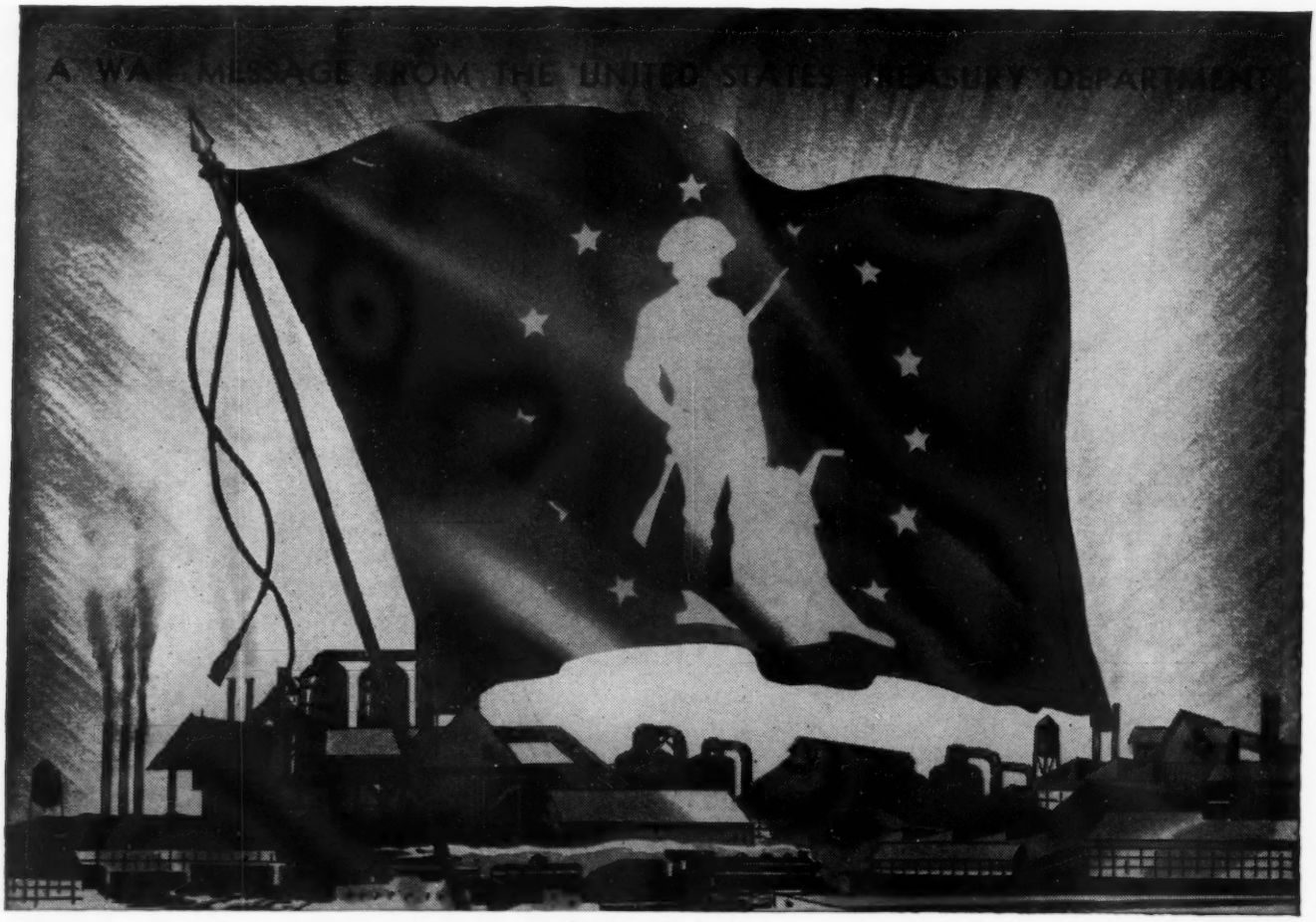

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Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly,* every pay day, through the systematic purchase of U. S. War Bonds.

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Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.

Make Every Pay Day "Bond Day"

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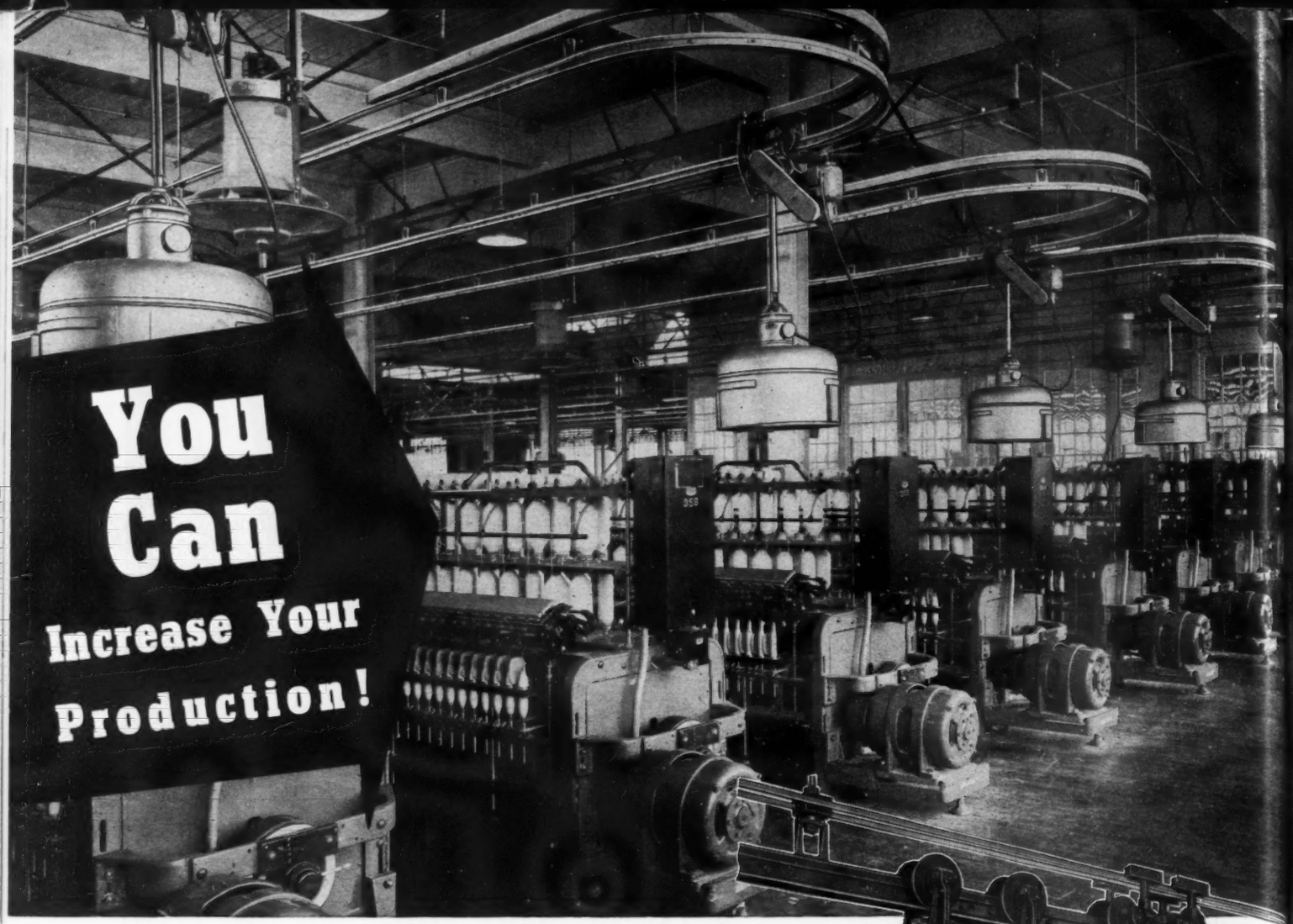
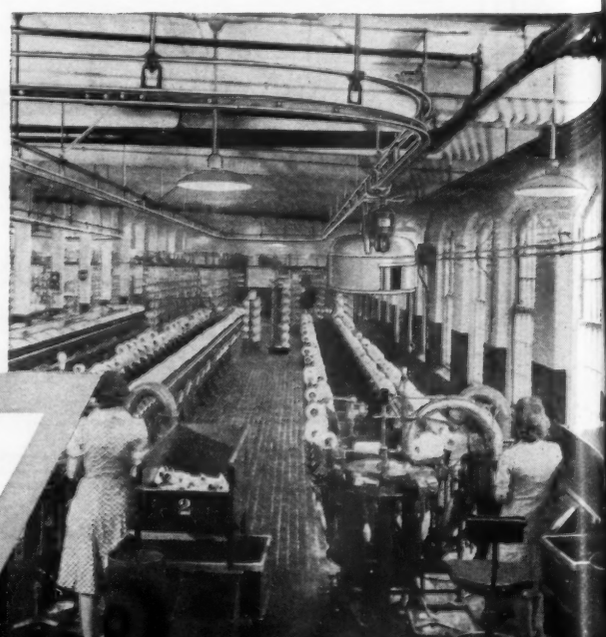


THE American MonoRail Automatic Cleaners keep machines producing full time. *Now*, more than ever before, it is necessary to keep machines going at top speeds. There is no lost production when American MonoRail Overhead Cleaners are at work over spinning, winding, twisting and warping machinery. Automatic cleaning enables spinners to handle more sides and reduce the number of gouts or bunches in the yarn. Cleaning is done better, quicker and more economically with American MonoRail Automatic Overhead Cleaners.

Let an American MonoRail Engineer explain such advantages as better running work; fewer gouts or bunches; less ends down; lower cleaning costs; no lost production and reduced machine stoppage. This information will be gladly given without cost or obligation on your part. Write us today.

Send for copy of book describing Automatic Cleaning and Overhead Handling in the Textile Industry.



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COTTON
SERVING THE
Textile Industries

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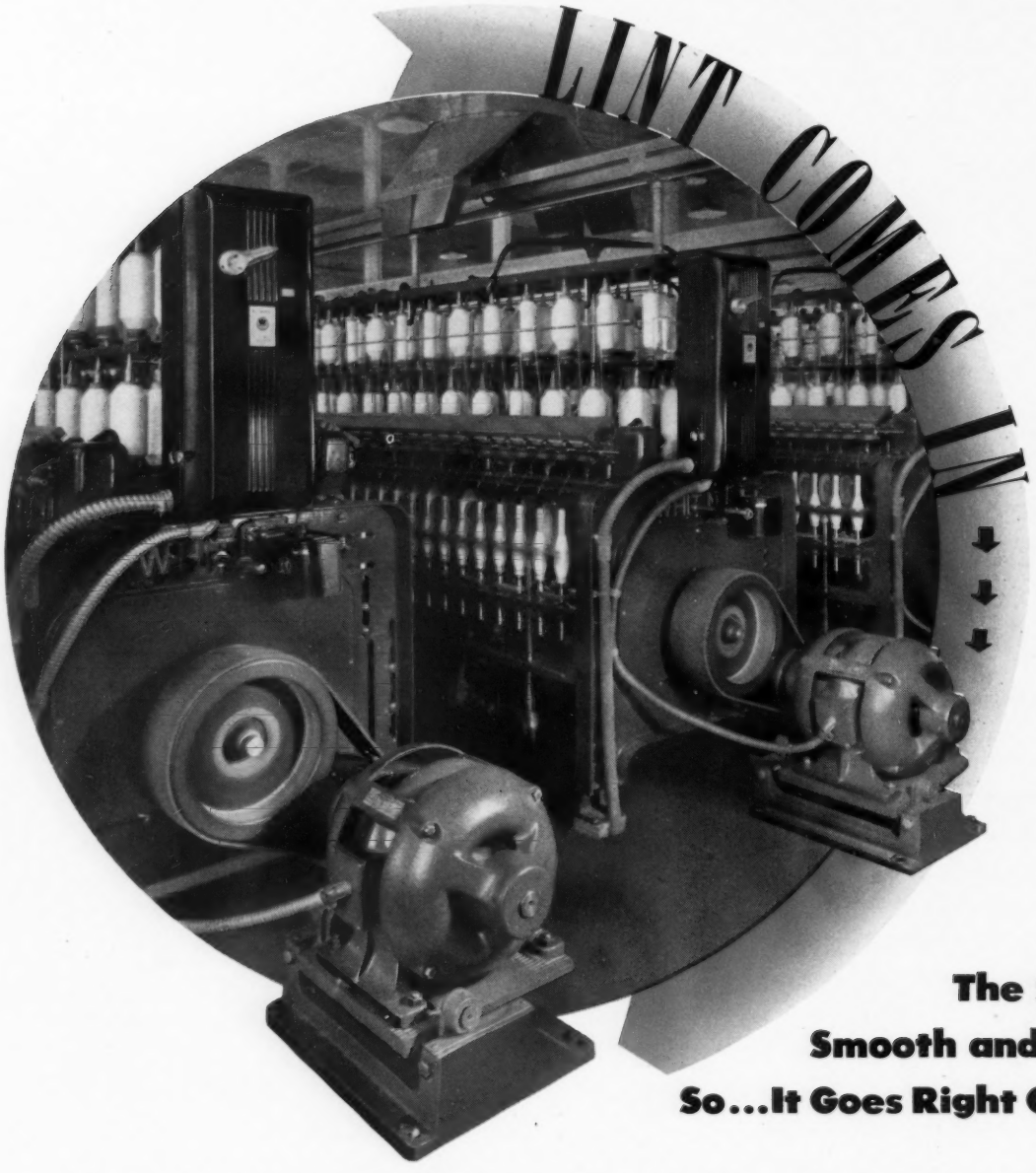
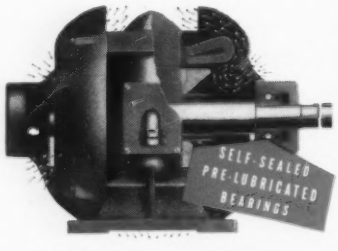


The Surface is Smooth and Round... So...It Goes Right Out Again



Ball bearings are factory-sealed, factory lubricated, completely enclosed. They keep the grease in, lint and dirt out.

There are no grease spots where lint can stick. No need for inspection or attention until after three years of service.

Westinghouse Lint-Free Motors Insure Cool, Continuous Operation—Keep Machines Running with Minimum Motor Care

You can't get away from lint in a textile mill—but you can keep it under control—minimize its damage. That's exactly what the Westinghouse Lint-Free Motor does.

The motor stays "lint-free," because lint passes in, through, and right out of the motor. Large, unobstructed air passages, high-gloss enamel surfaces, expel lint before it can catch hold—the motors clean themselves.

One-piece skeleton frame aids ventilation and inspection. Note the large air passages which direct the air flow around the stator windings—and out again. Clean, cool, continuous motor operation is assured. Get full details on how Westinghouse Lint-Free Motors can eliminate handicaps and hazards of lint in your mill. See your Westinghouse representative or write Westinghouse Electric & Mfg. Co., East Pittsburgh, Pennsylvania, Department 7-N.

J-21215

Westinghouse

LINT-FREE MOTORS

HERE'S WHY

QUICK-MAKE QUICK-BREAK

HELPS KEEP

PRODUCTION **up...**

maintenance DOWN

Loom Switch
Class 10-100, Size 1

Westinghouse "De-ion"
Loom Switches
for a-c Motors up to 7½ hp.

Quick-break action alone in a motor starter is not enough. For long uninterrupted life, it is important to have quick-make action, too. Westinghouse "De-ion" Loom Switches have both. No matter how slowly the toggle switch handle is raised to the "ON" position, as soon as it passes center, the positive-acting mechanism instantly exerts full pressure on the contacts. There is no chance of contacts carrying the full starting load before they are latched together tightly. This two-way protection against arcing minimizes pitting and burning, increases contact life. For complete information, write for descriptive folder. Address Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., Dept. 7-N.

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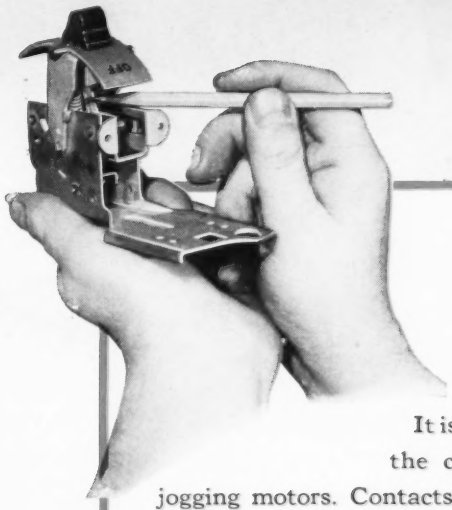
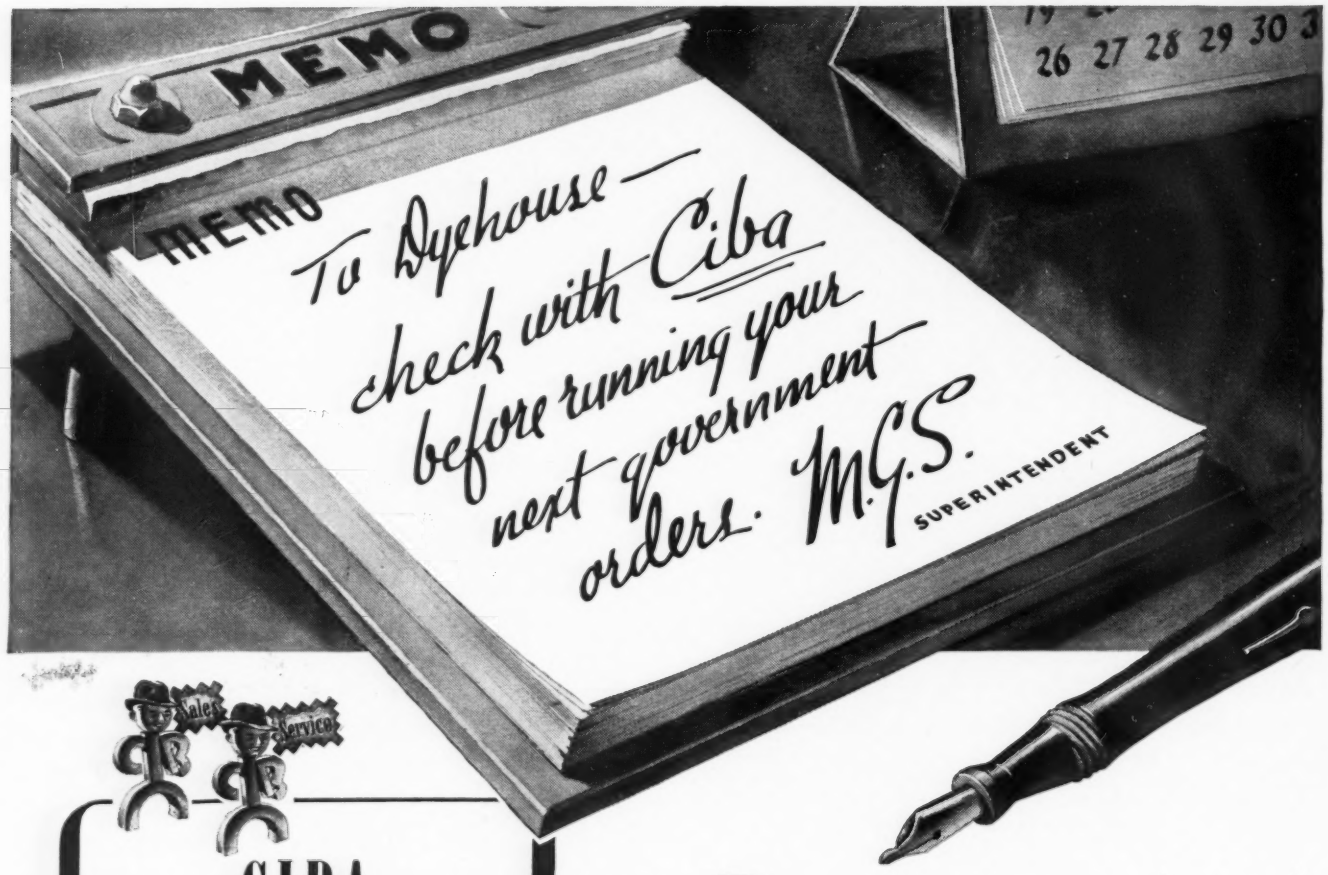


SPRING ACTION PREVENTS "TEASING"

It is impossible to "tease" the contacts, even when jogging motors. Contacts cannot be held partially closed. Two heavy steel springs which are under a constant 20-pound tension, give the positive quick-make quick-break action.

Westinghouse

WESTINGHOUSE W



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Sulfur colors will be used more and more. This sulfur dyestuff has good all around fastness properties and fits right into Army O D shades . . . It should be part of your formula.

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SHORTS AND REMNANTS

2,500 Booklets—Or Around the World with "Cotton"

We have just finished compiling the requests received by us in 1941 for literature listed in this magazine under "Helpful Booklets Free". During the year readers of COTTON wrote us for almost 2,500 booklets of advertisers covering practically all classes of machinery, supplies and services. No doubt many more such requests went direct to advertisers. (List of typical mills requesting booklets available upon request.)

Requests came from all corners of the globe, all sections of the United States, all classes of textile readers. Germany and Japan were missing, but they came from Shanghai in China; Bombay, Kalol, and Ahmedabad in India; Lancashire and Bolton in England; Victoria, Australia; Belgian Congo; Manila; Vera Cruz, Guanajuato, Coahuilla, and Monterey in Mexico; Buenos Aires in Argentina; Bahia in Brazil; Bello Antioqui, Barranquilla, and Medellin in Colombia; Lima, Peru; Guatemala; various cities in Quebec, Nova Scotia, New Brunswick, and Ontario in Canada. Seventeen states over here, mostly from Maine to Texas, were represented. The requests came from superintendents, agents, managers, directors, presidents, owners, chief engineers, efficiency engineers, technical superintendents, assistant superintendents, chemists, dyers, research directors, purchasing agents, overseers, knitters, second hands, etc.

Makers of almost every textile product were included with cotton mills' hosiery, (full-fashioned and seamless), worsted, dyeing and finishing, bleachery, rayon, underwear plants, etc., writing in.

The above sounds like boasting, but we are proud of this service in aiding readers and advertisers alike in dispensing literature developed by the manufacturers to aid in textile production. (See page 119, this issue.)

◆

Textiles in War Effort

The importance of the textile industry in furnishing goods for Army and Navy needs was emphasized by those in charge of a recent priorities clinic held in Atlanta, Ga. Mr. S. A. Palmer of WPB stated that the textile industry was fortunate in that it was an essential war industry and that officials at Washington intended to see that production is maintained in this industry. He did not discriminate between textile plants working directly on Government contracts and those contributing only indirectly or not at all, nor was there any explanation offered as to what would happen in the inevitable conflict in demand for vital materials and supplies.

However, he did state that every effort would be made by WPB to see that repair parts, maintenance supplies, dyestuffs, etc., would be available to continue present production. A new Production Requirement Plan, which will probably be ready for announcement by the time this is printed, is planned to replace the blanket priorities now in use in the textile industry and to allow mills to purchase ahead for three months on planned production.

Expansion programs will be allowed and furthered where they are necessary for production of military requirements, such as allowing installation of duck looms to meet the urgent need for cotton duck by the Army.

◆

Wants Endless Spinning Band

"Could you tell me the name and address of someone who manufactures a spindle band that is 'endless' instead of having a knot in it?"

M. F. THOMA

Vice-President,
Fitchburg Yarn Co.
Fitchburg, Mass.

◆

Luminous Paints

"The writer has read your article on Luminous Paints (March Cotton, page 63) with much interest. Can you tell us where we may buy the pigments and liquid medium . . ."

R. A. BOWEN

Purity Chemical Co.
Boston, Mass.

◆

Machinery for Fish Nets

"Can you direct me to a firm that manufactures machinery (or dealer in used machinery) for making netting such as is used for fish nets, laundry bags, etc.?"

C. FIANDACA

39 State St.
Rochester, N. Y.

◆

Mills Making Bale Covering

"Will you please advise me if you know of any cotton mills that are going to make cotton bagging (bale covering) of cotton this year?"

J. KENDRICK SANFORD

305 Tate St.
Greensboro, N. C.

(Any interested mills might write Mr. Sandford.)

◆

"Fighting Mad"

Walter Wier, copywriter for Lord & Thomas, Inc., advertising agency, voiced the sentiments of millions of Americans in a short article recently appearing in *Printers' Ink* magazine, under the above heading. Mr. Wier is tired of Defense Savings and Defense drives. He is also tired of plaintive songs. "Don't tell me there'll be bluebirds over the white cliffs of Dover. To hell with bluebirds. Tell me there'll be vultures and a deathly silence over Berchtesgaden."

The battle-song sentiment is rising; War and Victory are now replacing Defense in our thinking. Even those of us who deplore the senseless waste of mankind and resources in war, have to admit that it has no peer in unifying and awakening millions of people and in bringing out that there are ideals more valuable in life than a mere struggle for bread and butter. It is a high price to pay for waking a people up from a sense of false security to a realization that liberty, freedom and democracy are more than words from a dictionary . . . It's beginning to look as if it may be worth even that price.

◆

Booklets—U. S. and England

"I should esteem it a favor if you could forward me the books below as advertised in the January issue . . . I am a cotton spinning mill manager of a group of mills . . . Your book, COTTON, is undoubtedly one of the best monthly magazines I have read."

WM. K. COLLISON

Bolton
Lancashire, England.

"Please send me the free literature designed on the coupon. I expect this may be of good future use to me."

J. A. PICKERING

Atlantic Rayon Corp.
Lowell, Mass.

(As noted elsewhere on this page many of COTTON's readers take advantage of the booklets and literature offered each month by our advertisers on the pages entitled "Helpful Booklets Free". If you haven't checked this list recently, why not take a look (page 119 this issue) to see if there isn't something there that may assist you.)

Ola, Bello. Como esta; Lei Mosa? Sea vd bienvenido.

At the right is shown a good example of the type of roving coming off the frames of S. A. Fabrica Argentina de Alpargatas of Buenos Aires, below the equator. We "borrowed" this picture from a group received with the article on doffing, page 62 this issue.

Incidentally, what might be liberally considered as Spanish in the greetings above is what the library told us we should say to tell the young lady to draw up a chair and make herself at home.

Napoleon Could Have Told Hitler

IT will be recorded by future historians that the weakening of the German army in Russia, during the winter of 1941-42, was caused in large part by lack of sufficient clothing. Napoleon went through the same experience and suffered disastrous defeat. He could have told Hitler—if he had been here and if Hitler had been willing to listen.

Uniforms, too, are essential to an effective army. Properly designed clothing to fit the soldier's duties and the physical conditions under which he must fight. In many respects they are as essential as guns and bullets.

Georgia, through its great textile industry, is making a major contribution to the Nation's armed forces. Quietly, but with single-minded purpose, Georgia's cotton mills have changed from peace-time goods to war orders. Almost as a whole, they have gone to three-shift operation.

Our job, of helping to make American soldiers the best equipped troops in the world, will one day be rewarded — by Victory.

Georgia Power Company

COTTON
Textile Industries
Vol. 106 May 1942 No. 5

Let's Do It the Sensible Way

HEARTENING REPORTS are constantly coming in from our larger industrial centers about tremendous increases in manufacturing efficiency, due to skilled designers and production men streamlining manufacturing methods instead of following the awkward and cumbersome designs which seem to be characteristic of Army and Navy planning. Now that war production is spreading to smaller plants all over the country, there is a crying need for some practical means of introducing these same ideas of efficiency that have been found so absolutely necessary in the big factories.

We have in mind one shop which spent about a year trying to find out what it could make that would fit into the war plans. Various government agencies sent hundreds of blueprints to these people without their finding a single thing that they were equipped to manufacture. Representatives of this plant were constantly visiting government agencies throughout their territory, trying to find something that their equipment could be used to make. Finally, as much by accident as anything else, they discovered a line of war material that they could handle, and are now doing a very substantial amount of this kind of work.

A newspaper reporter or politician going through this plant and seeing the large amount of government work being processed would probably glow with enthusiasm over the accomplishment, but a practical machine designer and manufacturer inspecting this same production would feel a great sense of depression at the waste and inefficiency imposed by the government designs. There was one piece of equipment which this factory must turn out in quantity, which costs four times as much to make as it would cost with a few minor changes in design that would actually improve the machine. That would mean that with the same amount of labor, four times as many of these things could be turned out in the same amount of time if this design could be changed.

Another piece of mechanism, of which several hundred will apparently be required, is made with a stainless steel frame casting, weighing several hundred pounds. The working parts are stainless steel and some of the bearings are a special bronze with a very high tensile strength. The plant manufacturing this machine is not equipped to make steel castings, so those have to be brought from a foundry 200 miles away. The nearest plant capable of making the bronze bearings is about 600 miles away, and some of these steel castings have to be shipped to that plant and have the bronze poured into them and then they have to go to the testing laboratory to be sure that the bronze has the proper tensile strength. A recent lot of these parts was turned down by the inspector because the tensile strength was about two per cent under the standard.

These mechanisms are to be used where they will hardly have an expected life of one year under military conditions, yet they are designed and made to last 50 years, and it takes weeks of time to go through all of the lost motions necessary to follow the design. The manufacturer of this apparatus could make one of these units in a few days with ordinary steel and bearing metals which are readily available, and the cost would be less than one-fourth the cost of the way this thing is now being made, and the war would be over before it would need replacing if made the quicker way.

THIS SAME MANUFACTURER recently was asked to bid on a small piece of equipment which was so designed that it practically had to be whittled out of steel by hand. He submitted a bid on it, and at the same time pointed out to a government inspector that by making a slight change in the design, and a change which would really have improved the mechanism, this part could be turned out in a screw machine at a price one-twentieth the price of making it the way the design provided.

To all suggestions that these designs can be changed to speed up production and cut cost, the government men firmly reply that no designs can be changed, and that everything must be bid on and manufactured exactly as designed. Surely, here is a golden opportunity to pep up the war program by letting manufacturers who are specialists in certain types of work submit designs that will cut out waste and promote efficiency. If their designs are approved by the proper authorities, they should be standardized for all other manufacturers. In this way we could take advantage of the accumulated knowledge and experience of thousands of highly skilled machine designers and manufacturers.

THERE WAS a recent news story to the effect that some Detroit manufacturer had taken over the pro-

duction of a gun which had previously been made by the Army in one of its arsenals and where the manufacture of a certain part of the gun required 400 man hours of work. The Detroit manufacturer put his production technicians to work on this gun, and the part previously requiring 400 man hours now requires 30 minutes of the time of one man. After looking at some of these Army and Navy designs, this does not seem so extravagant. The part just mentioned which cost 20 times as much as it should have, required about 100 times as much labor to make it according to the government design as would have been required with the proper design. The cost of the material would of course have been the same in any case.

The big manufacturers are in a position to force these reforms on the Army and Navy designers. It has currently been reported that when Henry Ford agreed to build planes that one of his stipulations provided for building them his way so that he could tool up for quantity production instead of having to follow imperfect engineering plans that produced bottlenecks at every turn. The little plants, however, are in no position to bring such pressure to bear, yet the little plants are capable of producing a vast amount of miscellaneous equipment just as cheaply as the big plants can produce this sort of thing. For wartime efficiency we need to keep the big plants free of this sort of odds and ends of production as far as possible and let them concentrate on the big production problems which can only be solved in big plants.

Right now, speed is the all-important thing, and if impractical design makes a job last four or five times as long as it should, then that design should be changed. One ship next month may be worth more than 10 ships next year, and if we speed up our manufacturing methods and need 20 ships next year we can have them instead of 10. These cases cited do not seem to be exceptions, but rather appear to be characteristic of Army and Navy design. This is perfectly natural, because most of these designs have been worked out during peacetime when little military or naval equipment was being built, and the designers could lavish all of their ingenuity on working out complicated designs to look pretty on shipboard or in camp, and keep the otherwise idle workers in the navy yards and arsenals busy taking a long time to do what could have been done better in a little time. After looking over a lot of these blue prints, it is fairly evident that the designs were either made by hopelessly incompetent designers, or with the deliberate intent to make the things difficult to fabricate. All this sort of thing has to be swept away under the pressure of war. We are desperately in need of shipping, and every hour that a ship stands on the ways while some cock-eyed and impractical methods are being followed in building its equipment is an hour that helps our enemies and injures us.

FORTUNATELY for the textile industry, it has relatively few such problems to solve. Most government specifications for fabrics or yarn are practically standard for the industry. Textile mills do, however, sometimes encounter some of these incredibly cock-eyed specifications. There was the classic case of the Georgia mill that received a very elaborate and exacting specification for some duck in the First World War. The specifications were so rigid that production was slowed down and a good deal of the duck was laid aside as seconds during the mill inspection. A special inspector was sent down all the way from Washington to inspect this duck when it was ready for shipment, and after he had put in about 14 hours rigidly checking this fabric, the superintendent of the mill asked him if it would be violating any military secrets if he were to tell him what this incredibly fine duck was to be used for. The inspector cheerfully volunteered that it was to be used for artillery targets. And this at a time when duck was so scarce as to be more valuable than jewelry! Osnaburg would probably have done just as well and the remnants then could have been cut up for making bags or for wiping rags or for something else useful.

There was also the case of another cotton mill which got a large government order for gingham. It was a gingham with checks about 3 inches square. The specifications set forth that the dyes must be sun-fast and tub-fast, and went on to specify an extremely high grade gingham. At that time these dyes were practically worth their weight in gold. After the mill had the gingham ready for inspection, this superintendent was likewise curious to know what the Army did with checked gingham. The inspector said that it was no secret, but that the gingham was used for a purpose where cloth had to be torn in strips of varying, but accurate widths, and some swivel chair general had solved the problem by going down to a Washington department store to see what would answer the purpose. This checked cloth filled the bill, since the men tearing it up could count off a certain number of checks and tear. Cheese-cloth would have done just as well and could have been marked with colored thread at intervals to show where to tear. For no reason in particular, a very expensive cloth, finished with fabulously expensive dyestuff, had been used.

There is entirely too much of this sort of thing going on today. The United States is filled with manufacturing plants which have developed a tremendous degree of efficiency and which have acquired a vast amount of experience in the manufacture of certain kinds of things. Surely, the Government should have some sort of system whereby qualified men can rove around the country examining available plants and knowing from the scope of their equipment just what war material they can build effectively. It is almost hopeless for the individual plant to find that government department which wants the things they can make. The department has got to get out and make known its wants, and find somebody to fill them. This sort of thing is now being done by sub-contracting to a very large extent, and could probably be done quicker and more satisfactorily if the Army and Navy had skilled contact men who knew what was needed and could tell at a glance when a plant was equipped to supply it. When any plant has submitted a new design which will substantially reduce the cost and time of manufacture, it should be possible for some competent authority to approve such design to save time and money for the Government.

Pivot of the Piedmont

A Word Picture and Brief Biographical Sketch of the New President of the American Cotton Manufacturers Association

AT THE close of World War One in 1918, his part in that job completed, a youthful ensign resigned his commission, and left the Navy to return to his home in Greensboro, N. C. There he resumed a career in textiles which, with a few years' start, had been briefly interrupted by his war service. It was some years afterward that as an individual he became known in the industry much beyond his own organization. But once recognized, his usefulness and importance in the industry grew steadily and widely, and now, with the country in the throes of an even greater conflict, he has been called to leadership in one of its vital industries.

The young naval officer of two dozen years ago is now Herman Cone, just elected president of the American Cotton Manufacturers Association. By virtue of that office, he becomes the titular head of the southern cotton-textile industry. Thus, also, he becomes the subject of this, one of an established series depicting the lives and works and characters of those who receive this, the highest honor—and greatest responsibility—within the power of southern textile executives as a body to bestow upon one of their number.

Herman was born on May 2, 1895. Contrary to general impression, this event occurred, not in Greensboro, but in New York City. Careful research discloses, though, that at the time he was possessed of even less hair than now adorns his steady head. He is the eldest son of the late Ceasar Cone and Jeanette Siegel Cone.

The year 1895 brought another significant event in the life of Ceasar Cone, for in that year he and his brother, Moses H. Cone, started the Proximity Manufacturing Company in Greensboro, N. C. The story of the industrial romance and achievement, of which Proximity was the first and central unit, is a familiar and brilliant and inspiring chapter in southern textile history. How it was started by the brothers Cone, sons of Herman I, to make fabrics for the successful sales agency they had already organized; how it pioneered in textile printing in the South; how it achieved and retained leadership in denims and other fabrics; how it has always maintained progressive attitudes rooted in fundamental policies; how its policy of good neighborliness, started by its founders and kept inviolate by their successors, produced a practical, successful industrial relations program that was working long before this relationship called for the attention of so-called experts—these and other things are a part of the familiar, stirring story of the Cone group of mills. But back to the subject of our sketch.

Herman was taken to Greensboro as an infant, and that has been his home ever since. He grew up as a normal boy, attending the public schools of Greensboro, and upon graduation from the high school there, matriculated in 1914 at the University of North Carolina at Chapel Hill. He left after two years to join his father in the Proximity Manufacturing Company. There followed an intensive period of genuine work through the mill, and here an inherent ability in acquiring manufacturing technique and knowledge first became apparent; how effectively will be demonstrated later on in this sketch.

Then came a few years of training "on the road"—as salesman for the sales affiliate, the Cone Export and Commission Company. There was then, as now, no sinecure in the organization for a Cone, as such. The more comfortable and

convenient calls, in the larger towns and cities, were reserved for the senior salesmen, and as a "cub", Herman had to beat the bushes in all the little towns and way-stations, wherever there was a prospective customer for Cone fabrics, in a territory extending from Alexandria, Va., to Tampa, Fla.

But manufacturing and management, rather than sales, had already shown up as Herman's forte, and so, in early 1917, after his father's death, he returned to the mills, which had by now grown to proportions exceeding the highest dreams of the founders. Herman's father passed away in March 1917, and Bernard, a younger brother of Ceasar and Moses, was made president, and Herman became treasurer of Proximity. In the years that followed, Herman assumed more and more responsibilities and in 1938 became president succeeding his uncle, who became chairman of the board.

The business acumen of the Cone brothers and their associates had produced in Proximity a tremendous textile manufacturing organization, including the Proximity Cotton Mills, the White Oak Mills, and the Proximity Print Works, all in Greensboro. In addition, their successful achievements, their progressive policies and their integrity and high standards, had resulted in their becoming interested in a number of other textile enterprises. While Herman still considers his primary job as the management of Proximity—and that's a big one, in itself—he is an officer in various other textile organizations in which the Cones became interested. Partly to complete the factual record, but primarily to indicate something of the variety and scope of his responsibilities, a list of his corporate connections, in addition to the presidency of Proximity, is given here:

President, Revolution Cotton Mills, Greensboro; president, Minneola Mfg. Co., Gibsonville, N. C.; vice-president, Tabardrey Mfg. Co., Haw River, N. C. The facilities of the textile plants in which he is an active corporate officer, including Proximity, comprise approximately 385,000 spindles and 11,000 looms. He is a director, as well, of the Salisbury Cotton Mills, the Eno Cotton Mills, the Cliffside Mills, the Florence Mills, and the Asheville Cotton Mills. He is chairman of the board of the Cone Export and Commission Company of New York City, the selling agency for the plants listed as well as for a selected group of other mills. The products of the mills in which he is interested are varied, including, in addition to denims and similar

This rare print, made about 1903, shows, at right, Herman Cone, with, left, one of his brothers, Benjamin Cone . . . . . .

fabrics, flannels, corduroy, piece-dyed drills, jeans and twills, print-cloths, suedes, moleskin, plisse, combed yarn broadcloth, woven and printed ticking, coverts, terry towels, whipcord and suiting.

This imposing list of business connections presents a staggering job, and it is proper now to look closely at the man who, at 47, has for nearly 10 years directed the affairs and policies of so far-flung an enterprise, and who now has assumed, in addition, the leadership of his industry. Incidentally, his election to the presidency of the American Association came in Atlanta on his 47th birthday, which is mentioned as a co-incidence along with that of his birth in the year of the founding of the mill organization he now heads.

Herman has previously served his industry formally as president of the North Carolina Cotton Manufacturers Association, and as a member of the executive committee of The Cotton-Textile Institute, of which he has now become vice-president by virtue of his American Association presidency. He is now a member of the Cotton-Textile Industry Advisory Committee of the War Production Board.

Let us examine briefly his business and working methods and characteristics.

In the first place, Herman is, in the things that count, a projection of his father, Ceasar Cone, and in turn, of his grandfather for whom he was named, the grand patriarchial head of the family. Herman early assumed and has faithfully carried on the eldest-son tradition of the family. He has accepted the responsibilities that go with that position in a large but closely-knit and intimate family circle, with a pledge—never spoken, perhaps, but nonetheless real—as a trust to be properly administered and passed along to the next generation not only unimpaired but greater and fuller than when received. Associates whose service with the organization spans the leadership of father and son—and they are to be found by the score in places low and high—remark the unusual fidelity with which Herman's philosophy of management, his points of view, his decisions, parallel those of his father. It is practically unanimous among them that Herman is operating the business just as Ceasar did—and just as Ceasar would today, with the changes that those same fundamentals of integrity and business sagacity would call for under the altered external influences, and that would naturally come from the resilience of a younger point of view. But in the essentials, they say, just the same.

It should be further recorded that never has there been an instance in which he has ever traded on his position, or asked a single favor because of his name—and a further tribute, not at all limited to his associates, is that Herman would have been an outstanding success without the material inheritance which came to him. As a matter of fact, as one observer aptly put it, and as it has proven out time and time again, the responsibilities there inherent outweigh the advantages and test even more tryingly the mettle of the man and his abilities.

Herman Cone's outstanding characteristic—and you hear it proclaimed and confirmed by business associate, customer, employee, and competitor—is a complete sense of fairness and integrity. Naturally

possessed of a family trait of honesty and fair dealing, he saw this as the cornerstone of the business structure of his grandfather and inculcated as the very essence of the business policy of his father and his associates in the previous generation. He was brought up in an atmosphere of business honesty and fair dealings with which his own principles identically coincide. He is considerate and genteel, eager to listen to another's views, and patient to the end.

Herman runs his gargantuan job in an effortless, informal way. He concentrates on manufacturing and management, with an indirect but not indifferent interest in the selling, which he leaves in capable hands. His office is at Proximity in Greensboro, and he spends most of his time there. He maintains regular office hours, but has no fixed routine schedule, is most approachable and literally maintains an "open door" policy, so far as his own office is concerned—and this applies to any employee of the organization. That may or may not be a mistake—insofar as trespass upon his time is concerned—but it is his policy, and week-in and week-out, there are relatively few abuses of the privilege. He maintains this accessibility without interfering with common-sense rules of management and supervision, but it is clearly understood that anyone in the organization can see him—and he has the enviable ability to get promptly, though not abruptly, to the point without undue waste of time and invariably the caller leaves with the purpose of his visit satisfied or referred to the proper person for adequate attention.

This policy is but one evidence of the friendly neighborliness of the organization. The people in it are deeply indoctrinated with what may be termed an industrial family sense. The Cones from the beginning have exhibited a deep personal interest in the welfare of the people who make up the organization. In specific instances the manifestions *may* belong to another day, just as elsewhere throughout the industry; in others, there *may* be the shortcomings that fall short of the ideals of the theorist, but in essence and intent, and result, the human-relations or industrial-relations policy of the organization is sound and enlightened, and more than meets the needs of the community.

An outstanding policy that has always prevailed in the Cone organization, and one to which Herman adheres with almost slavish intensity, is one of promotion from within the organization as a reward for loyalty and experience. An instance is the story—literally true—that some years ago, upon the death of the general manager, promotions finally resulted in the employment of two new doffers. Here again there may be weaknesses and temporary penalties, but on the whole the policy has worked to the benefit of the organization.

The Cone organization, managerially speaking, is made up of a group of co-operating, co-ordinating specialists, trained in the ways of the organization. It, incidentally, retains under Herman many executives who started with it in the early days, whose judgment and experience he respects and who find it easy to follow his leadership. Herman finally says the word that gives authority to the plans and policies. As an executive, he is more interested in what something will do, how much it will cost, when it will pay out, and how badly it is needed, than he is in what makes the wheels tick.

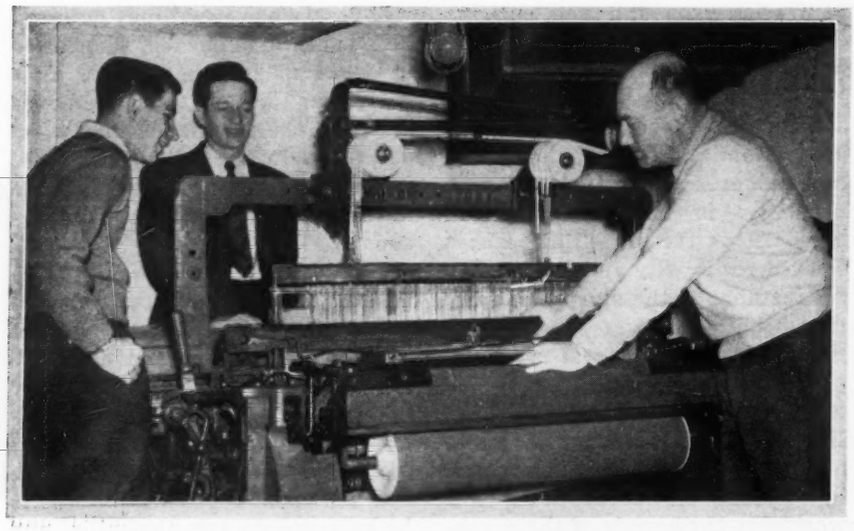
Herman keeps close personal track of the workloads and wage schedules in the mills, and there is not a rate set or changed in the mills that he does not pass on personally.

His feelings toward the man in the mill are kindly all through, and he will go all the way to see that he has a fair show and a square shake, but if he is met, in a labor negotiation for instance, by a bull-headed, obstinate minority that makes unreasonable demands, he can tell them soon and plain that he proposes to run the mills, and not have them run by any small, unreasonable group.

He has the type of mind and approach that makes him ready to meet any issue squarely and promptly when it arises, with no temporizing or procrastination or buck-passing.

Herman, despite the apparent complications of his active interests, and his own attachment for keeping in close touch with certain vital points, actually operates on a simple, easy, unconfused pattern. Despite the weight and ramifications of his jobs, he really runs

"Cotton's" candid camera caught Herman Cone unawares in these four characteristic poses during a conversation in his Greensboro office



Alan and Herman, Jr., receiving a lesson in denim weaving from their father on the loom in the basement of the Cone home . . . . .

them all pretty much as if they were one. He does insist that his plants be kept modern, efficient and safe, and that the employees give a fair day's work for a fair day's pay, and that in and out of the mill, they receive fair treatment and consideration. His grasp of manufacturing, which is as much native as acquired, enables him easily to keep up with what is going on and check the mechanical and operating efficiency of his plants from the reports that come to him, and his own first-hand knowledge and observation.

As a man, Herman Cone is about average height, essentially square in face and figure, walks with a poised sure step, light but not nervously q u i c k. Prematurely bald, his face, well tanned from golf and fishing, has lines at the eyes that give the impression that he has either just heard a good story, is thinking about one he heard yesterday, or is waiting for a break in the conversation so he can put into the mill his grist of telling but kindly humor.

He is a good listener as long as the facts are presented no slower than half as fast as he can think, but has only a contained patience for the bore, the fumbling talker, or a man too tedious in the telling of a story. He does a lot of reading—the local papers and a New York paper every day, and the textile trade magazines. He has the square hand of the doer, and the meeting fingertips of the negotiator. He smokes a pipe, usually, and does it as though he enjoys it plenty, and rubs it on his nose to make the bowl take a shine. When he does take a cigar, he doesn't eat it, and often wears the band on his right little finger until the smoke is about half gone. He sits relaxed while listening, usually with his eyes almost closed, and his hands clasped behind his head.

Personally, he actually is so modest and self-effacing as to approach shyness, though he is the most sociable and hospitable friend a person could have. In his appointments he is punctual and appreciates from others the consideration of promptness. In conferences in the councils of the industry, he is an attentive listener to all the discussions, and invariably contributes to the meeting in sound, clear thinking and analysis, usually after the smoke of discussion and argument has cleared away.

On March 20, 1922, Herman was married to Miss Louise Wolf, of New York City, who is a sister of Mrs. Bernard M. Cone. They have two sons—Herman, Jr., 18, and Alan Wolf, 16. They live in Greensboro, across the road from No. 2 fairway of the country club golf course. Herman is a week-end golfer of indifferent ability, playing Saturday afternoons in a regular foursome and frequently on Sunday with Mrs. Cone. His chief avocation—shared by Mrs. Cone—is fishing, and several times a year they go to Florida for tarpon and sailfish. In the home there is an atmosphere of family congeniality and companionship and unity. Both of the boys are musically inclined, which Mrs. Cone does not discourage—but in the basement is a 40-inch E Model loom on denims and Herman, Sr., is always eager to take the boys down there.

A review of Herman's business activities will disclose that they are exclusively textile. However, his interests always extend beyond his own business to the community and the nation. He has a genuine, sincere feeling of social responsibility and can always be counted on to do more than his share in any constructive undertaking. He has served as president of the Greensboro Rotary Club and Community Chest. For years he has manifested a keen, active interest in Boy Scout work, and thus far, except for photographs of his father and family, and pictures of the mills, the only thing adorning the walls of his office is a document carrying his Silver Beaver Award from that organization.

The American Association is particularly fortunate in having Herman Cone come into its leadership at a time which involves so many problems for the industry and for the nation. He will bring to the administration of its affairs a logical and facile mind, an unselfish spirit of service, a rich experience and a heritage of integrity and fairness. He will represent and speak for it without uncertainty, confusion or fear, and will give it progressive, active leadership and an enlightened, liberal administration.

At the insistence of the membership, he just recently accepted the presidency of the Greensboro Chamber of Commerce. In doing so, he made it plain that it would have to be his No. 4 job. His No. 1 job, he explained, is his work with the War Production Board in the grave national crisis; No. 2 is his responsibility to his private business and the people dependent upon it; and No. 3 is his responsibility to his industry through the American Cotton Manufacturers Association and The Cotton-Textile Institute. That is a revealing picture of the man and his philosophy.

The "mobile unit" used in the mills of Marshall Field & Company, for identifying employees; fingerprinting is shown at left, and photographing with a special camera at the right . . . . . .

Employee-Visitor Identification Plan at Marshall Field Mills

CO-OPERATING with Federal authorities to the end of excluding from its various plants those who do not have bonafide reasons for entering them, the manufacturing division of Marshall Field and Company with plants in North Carolina and Virginia has inaugurated a comprehensive system of identification.

This identification system involves bringing up-to-date the personnel records of the employees, fingerprinting of each employee as well as photographing of each employee.

To each of its nearly 6,000 employees, the company will issue a tamper-proof identification card bearing the employee's photograph, name, color of hair and eyes, and height. This card carries also the signature of the employee as well as that of the employment manager who is authorized to issue such identification cards.

For the reason that operations of Marshall Field and Company's manufacturing division are carried on in several plants, it is necessary to issue cards that permit persons such as managers, superintendents and shop men to enter all plants, while certain other persons are issued identification cards that are honored at two or more plants, these being the only plants which their position makes it necessary for them to enter.

The cards of this type are stamped with appropriate letters and a key number readily recognizable by the guard.

Employees working in one plant, with no occasion to go into another plant, are issued cards for their respective places of employment only. These cards are to be shown to guards before employees are permitted to enter their places of employment.

A visitor, after having been certified by some official, registers on forms which give information as to whom he is representing and the person to be interviewed. This pass must be displayed in a prominent place on his coat and is to be worn as long as he is in the plant and returned to the guard as he leaves the plant. Copy No. 2 is retained by the guard, and he indicates upon it the time of entering and leaving the plant. Copy No. 3 is locked in the machine in which the passes are written in triplicate and cannot be removed by other than an authorized person.

The mechanics for handling a job of such proportions is a mobile unit, easily transferred from plant to plant. There are two girls for interviewing, two girls for fingerprinting, one typist and one photographer. The work is done in the plants by departments. The average time required per employee is about two minutes; this speed has been obtained by local personnel of no previous experience in work of this kind.

The reasons for establishing an identification system were publicized by notices on the bulletin boards. Co-operation on the part of the employees has been wholehearted and enthusiastic, with such occasional remarks as, "This is one of the best things the company has ever done."

Girl Doffers in Argentina

The special doffer's truck in use in the Alpargatas plant in Buenos Aires. The box, with sections for empty and full bobbins, is lifted from the truck and set on the winder . . . . . .

By George W. Murphy, Jr.

S. A. Fabrica Argentina de Alpargatas, Buenos Aires, Argentina

WITH THE increased needs for man-power for the armed forces, perhaps American manufacturers might learn something from foreign mills employing girls and women on jobs usually done by men.

In Europe and South America there has always existed a large wage difference between male and female labor. In Argentina we find that the minimum rates for men run from 62½ to 70 centavos per hour, while those of female labor run from 30 to 35 centavos per hour.

Piece rates, too, are based on like differences, often with men and women tending the some loads. From this it isn't hard to see why the labor force of Argentine textile industry is composed of 85 per cent female labor against approximately 40 per cent in the U. S. A.

Often mills are bound by tradition and use men for certain jobs just because they always have done so. Here, however, textile manufacture is a new industry and past experience does not bind it to any set rule. For example, we find women slubber and intermediate hands are very efficient. It is of course accepted the world over that female drawing tenders, speeder hands and weavers are almost equal to men.

One interesting job generally done by men in the U. S. A. is doffing on spinning frames. There seems to be no reason why men only should do this job because it is certainly no more difficult than other jobs done by women: doffing fly frames, for example. For many years the spinning doffing job was done by small boys and it is admitted that women can do much harder work than these small boys.

At our mill the doffing problem has finally been settled, after many trials and troubles. While the bobbins per worker-hour are not equal to those of a good American mill, they are not far off, and this work is done by girls of an average of 21 years, with from 3 to 5 years experience.

A short description of the system might be of interest as it was converted from the Continental "large group" system to one based on the American plan. Under the Continental doffing system, a large group of girls worked together. This group is composed of 6 doffers, 6 "gaiters" or "piecers" and one head doffer—13 to the group. The theory behind this system, of course, is that maximum machine efficiency comes first. Then, too, outside of the United States, England and possibly Germany, duties and freight rates on textile machinery run up the original cost so much that machine efficiency overshadows labor cost, which is not to be compared with United States standards.

We found that with the old sys-

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The June 1941 issue of COTTON carried an eight-page article, replete with illustrations, by Mr. Murphy, describing in detail the equipment and practices of this outstanding Argentine textile plant. Copies of that article may be procured upon request. —THE EDITOR.

tem, 200 to 225 bobbins per hour per worker were lifted. After installing our new system, 900 to 1,100 bobbins per worker per hour are handled easily.

In our spinning room of 50,000 spindles, approximately 40 per cent of the spindles are 6-inch traverse and 2-inch ring, the rest being 8-inch traverse and 2¼-inch ring. All the spindles have the English type "tight-on-the-spindle-b l a d e" bobbin which is not so satisfactory as the acorn type, as bobbins heights vary extremely and bobbins are very difficult to remove when full. Calculating the same amount of work done, we find that on the 8-inch traverse bobbin, the girls lift approximately 900 bobbins per hour each, while on the 6-inch traverse, they lift 1,100 bobbins per hour each.

The only novel feature of our system is that the doff box is double-sided—with one for full bobbins and one for empties. With the correct number of bobbins for one frame side in each box it is bodily placed on the winding frame for use of the winder hand. As she goes down the frame she places a full bobbin on the winder and puts an empty one in the corresponding side of the same box. In this way the yarn and bobbins are never "dumped" a n d are handled the least amount possible. When the box is returned to the racks in the spinning room, the doffers have it at their disposal ready for doffing. No time is wasted looking for bobbins or filling the doff and machine. The accompanying illustrations show the construction of the box and doff truck. It will be noticed that this box is made of wood. This is only a temporary construction as fiber boxes are being made to replace them, since fiber is found to be lighter and more durable.

A detailed description of our doffing system may be of interest. We insist that the girl doffers doff in the best accepted United States manner. They are required to stand at the side of their doff box with the box being pushed right-to-left by means of the right knee. The empty bobbins must be grasped with the right hand and the full ones removed with the left hand. Bobbins must be put on as they are grasped as the doffers are not allowed to lose the time necessary to straighten them out in their hands. No bobbins may be tapped on top, either with bobbins or with the hand, but must be put firmly when they are placed on the spindle.

The doffer's job consists of the following:

1. Go to doffing frame with empty box on doff truck.
2. Lower ring rail.
3. Doff frame, one doffer to each side.
4. Start up frame and piece-up; and
5. Take full box to rack and change for empty box.

The doffers have nothing other than this to do except assist in the Saturday clean-up. They are not permitted to leave the floor but have absolutely. no other duties. Their rest belongs 100 per cent to them. They are held responsible for seeing that frames are doffed in the proper sequence and that too many frames are not stopped for doffing. They are paid by piece work from reading of the hank clock.

As English-type frames are in use they are much longer than the ordinary ones; our frames have up to 432 spindles each. Thus one side requires a large doff box and one a bit clumsy for a girl doffer to handle. A rule has been made requiring that two girls must lift a full box of yarn together.

In our mill, we re-wind all of our filling yarn—spinning bobbin to cone to filling winder. This seems a bit costly, but with the many types, counts and mixes which we have in operation, we find it necessary. Too, weaving efficiency goes up with the perfectly-formed quills produced.

The new doff-yarn box will allow the definite establishment—one day when priorities allow us to purchase a conveyor—of a simple system of conveyorized transit of yarn from spinning to coning process.

The labor saving has been so great on the installation of this system that we now find that we have almost doubled the average hourly doffer's wages and are still effecting approximately 20 per cent savings on the total spinning room labor cost.

Another feature of this system is the ease and simplicity with which different counts and cotton mixes are kept separate. The box color denotes from which group of frames it comes and a yarn ticket denotes the frame number, yarn number, etc. As the yarn is never dumped and almost always is spun on one group of frames we have little difficulty in keeping it apart.

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Showing how the box of the special doffing truck is removed. The box, made of light wood, is 40" long, 15" wide and 15¼" high. The section for full bobbins is 27" long, and the one for bare bobbins 13" long. Bobbins are never dumped; when full of full bobbins the box is set on the winder, where the operative p u t s empty bobbins in the section for them, so the box is ready to be returned to the spinning frame for use at the next doff . .

A Primer of Wartime Economics

A simple and clear explanation of the major economic problem in this country today; stripping the mystery off the bogey-word "inflation" . .

WITHIN the next few months, at the latest, the Government and the people of the United States have some basic economic decisions to make which will almost certainly determine the outcome of the War. These economic questions have inspired a great deal of discussion in Congress, a great deal of newspaper comment, and a great many speeches by public and semi-public men. Although there has been voluminous discussion of these problems, it seems that everyone attacks them from their political side, whereas they deserve consideration principally as problems in economics rather than as matters of politics.

What are the basic, underlying reasons for the proposals about abandoning the 40-hour week, about putting price ceilings on goods, wages and profits; for rationing raw materials and manufactured goods; and for many of the other restrictions that have been imposed, or which are in prospect? We think that a brief, simple exposition of the economic factors involved should be helpful in understanding why a great many things have to be done whether we like it or not.

Suppose we represent the entire national peacetime economy of the United States by the rectangle shown in Figure One. Within this economy, every gainfully employed person is producing something which is of sufficient value to some other gainfully-employed person to keep industry and commerce going, except that we have a small segment of unproductive overhead which is the necessary expense of government. This necessary expense for the Federal Government in peacetime generally amounts to about two or three per cent of the total national income. The total Government expense is usually somewhat more than this proportion, since the Government is always engaged in some activities which are not absolutely necessary, but which are dictated by political expediency. The extent of these activities will fluctuate considerably, and at the outbreak of the present war the total Federal Government cost represented roughly 10 per cent of the national income. The irreducible minimum of Federal Government expense is represented by the small rectangle in the upper corner of our figure, and the total additional expense of government is represented by the larger rectangle which is designated as emergency government expenses.

It is quite evident that all of the income of persons employed in the Government derives from the civilian population, since the normal functions of government produce nothing which enters into the channels of trade. Every useful thing upon which life depends, or which ministers to our health or comfort, is produced by the civilian economy, and a portion of these things must be donated to those who are employed in the business of government. Quite evidently, if we transfer any group of workers from the civilian economy to the governmental department, we have reduced the volume of consumer goods produced and reduced the standard of living of those in the civilian group. In normal peacetime there will be a fairly stabilized relationship between the producing civilian group and the non-productive government group. When the governmental group tends to become too large and too great a burden upon the civilian economy there is pressure brought to bear on the Government to reduce this burden and something is done about it.

As soon as war starts, we must immediately develop an entirely new economic sector within which will be thousands of factories, millions of men, and incalculable quantities of materials. In the early stages of a war, it is possible to superimpose the war economy upon the civilian economy with practically no economic dislocation, but it is very difficult to do this on account of the political resistance which is invariably met. We have just been passing through this stage. Referring again to Figure One, we have sliced off a portion of the civilian economy which is to be devoted to the war, and at the same time, since our emergency governmental expense has been restricted, it is thrown in with the war expense, and the civilian economy now covers 75 per cent of the whole, while the war and government economies represent 25 per cent.

That is the situation as it stood in the United States quite recently. Now, had the people of the United States been willing to observe economic law rather than political law, the government and the war activities could have been supported at no expense to the civilian economy whatever, beyond some trifling differences having to do with imported goods. Since the civilian economy had rested on a 40-hour week, it could be expanded 25 per cent at no cost to anyone if everyone had been content to work 25 per cent longer for the same pay they got for 40 hours.

This situation is graphically represented in Figure Two, where the civilian economy has merely expanded to carry the emergency expenses of war and government, and here the civilian economy has experienced no recession whatever. To put such an adjustment in effect, it is necessary that all employed people agree to work extra hours with no pay, and that all owners of factories are willing to be satisfied with the same total profits they have been making with no percent-

FIGURE ONE
TOTAL NATIONAL ECONOMY

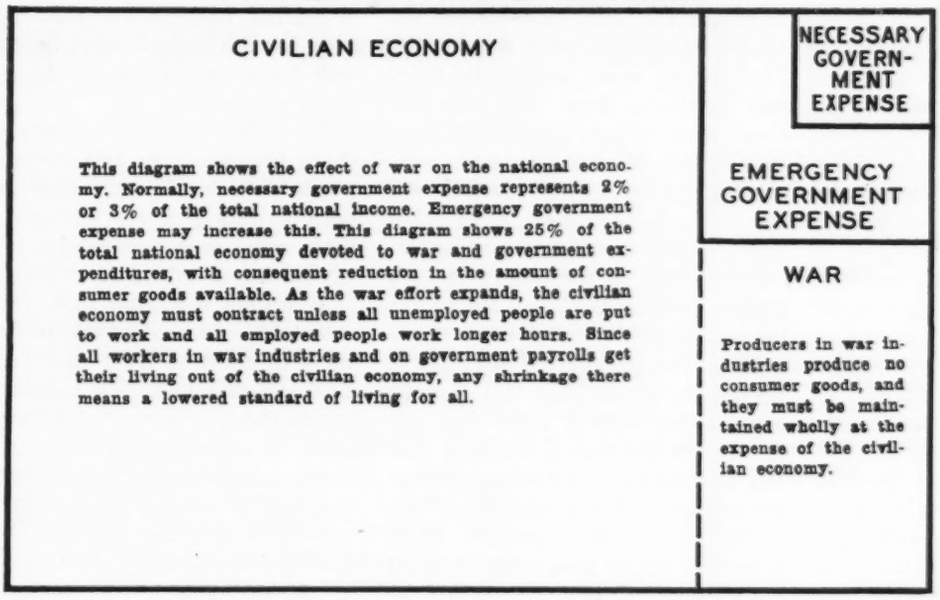
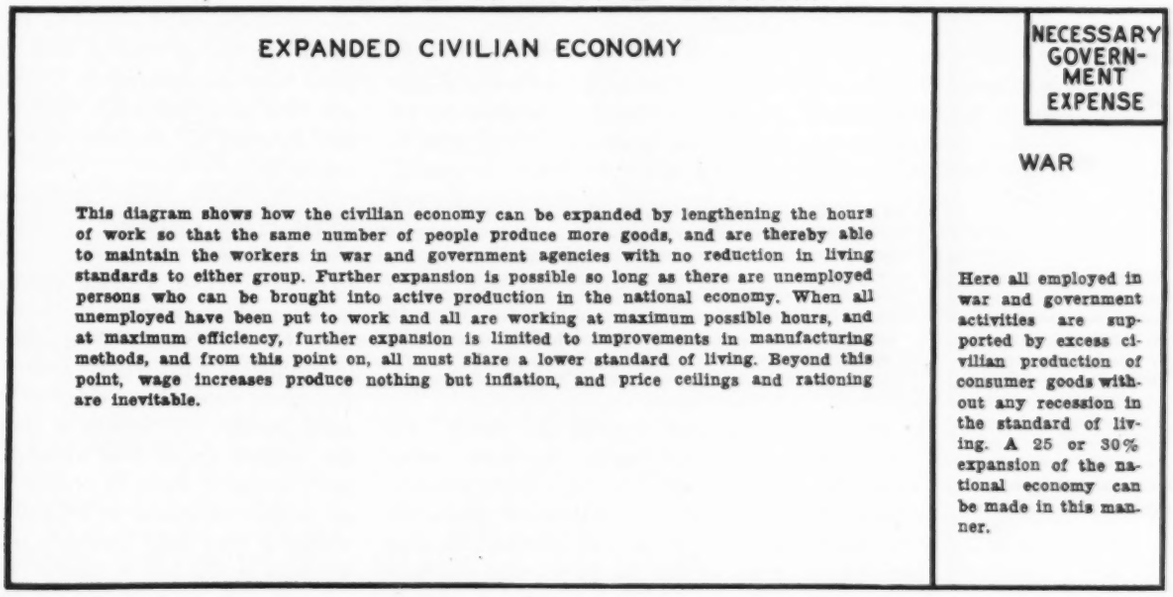

CIVILIAN ECONOMY
This diagram shows the effect of war on the national economy. Normally, necessary government expense represents 2% or 3% of the total national income. Emergency government expense may increase this. This diagram shows 25% of the total national economy devoted to war and government expenditures, with consequent reduction in the amount of consumer goods available. As the war effort expands, the civilian economy must contract unless all unemployed people are put to work and all employed people work longer hours. Since all workers in war industries and on government payrolls get their living out of the civilian economy, any shrinkage there means a lowered standard of living for all.
NECESSARY GOVERNMENT EXPENSE
EMERGENCY GOVERNMENT EXPENSE
WAR
Producers in war industries produce no consumer goods, and they must be maintained wholly at the expense of the civilian economy.

FIGURE TWO
TOTAL NATIONAL ECONOMY


EXPANDED CIVILIAN ECONOMY
This diagram shows how the civilian economy can be expanded by lengthening the hours of work so that the same number of people produce more goods, and are thereby able to maintain the workers in war and government agencies with no reduction in living standards to either group. Further expansion is possible so long as there are unemployed persons who can be brought into active production in the national economy. When all unemployed have been put to work and all are working at maximum possible hours, and at maximum efficiency, further expansion is limited to improvements in manufacturing methods, and from this point on, all must share a lower standard of living. Beyond this point, wage increases produce nothing but inflation, and price ceilings and rationing are inevitable.
NECESSARY GOVERNMENT EXPENSE
WAR
Here all employed in war and government activities are supported by excess civilian production of consumer goods without any recession in the standard of living. A 25 or 30% expansion of the national economy can be made in this manner.

age increase for the increased business that they do. That means that everyone simply produces 25 per cent more to take care of supporting that sector of the population which has been transferred from productive effort to war effort.

It is necessary here to clearly distinguish between productive effort which provides those things necessary to the support of the population, and the production of war goods which do not enter into the life of the people. It must be clearly borne in mind that everything rests on the civilian economy. While politically, the workers and soldiers in the war and government groups may be heroes, economically they are a burden which must be totally supported by the civilian group. While the war economy may produce billions of dollars' worth of material, the people that produced this material, cannot spend their wages for a single dollar's worth of it, nor can anyone in the civilian group buy so much as a dime's worth of the things produced by the war group. Therefore, the whole structure rests on civilian production. Every cent of wages paid to the war workers must be spent within the civilian economy. If the civilian economy is intelligently expanded, as in Figure Two, so that there is just as much civilian production for civilians as there was before the war, and the war workers are taken care of by the excess civilian production, then the war can be conducted on a business-as-usual basis and there need be few if any shortages of anything for anybody, save for those

imported materials which cannot be produced domestically.

Such a simple solution cannot be reached, however, because workmen refuse to put in the extra hours necessary to support the war effort painlessly; manufacturers expect extra pay for extra use of their factories, and in short, everybody hopes to make a profit out of the war. This of course is impossible, since profits arise from adding value to useful things which can be employed in commerce. In a war economy, all added values are sunk at sea, burned up in guns, or otherwise destroyed. A few individuals may profit by a war, but the mass of the people cannot because there is no profit created by war.

War does, however, stimulate business transactions and the flow of money, and thoughtless people generally believe that this is synonomous with prosperity. That this is far from being the case is easily seen by referring again to Figure One, where the national economy has not been expanded in terms of goods, and where the war is being carried on as just another business enterprise. Since 25 per cent of the factories and the wage-earning population has now been taken out of civilian production, there is only about 75 per cent of the volume of consumer goods produced; and this at once causes shortages, and calls for a lengthening of working hours and machine hours, and a general stepping up of production. When this production has been sufficiently stepped up to reach the expansion indicated in Figure Two, we have the same production of goods, whether extra time has or has not been paid for the extra work done, but if extra payment has been made for this extra work, we have now encountered the most deadly economic peril of them all—inflation.

Of course, if this inflation could be applied as a blanket over the whole economy, everything would go up a certain amount and stop there, and we would be right back where we started, with more dollars which were worth less; the actual economic status in terms of production being the same in either case. This, however, is not what happens, because if people were willing for it to happen they would have agreed in the first place that the war needs must be met by more work for the same pay. What actually happens is that people who are getting more dollars in their pay envelopes think they are getting more money, while of course they aren't. Money represents purchasing power, while dollars are merely units of money. If it takes more dollars to cover the same living expenses, a workman is not getting any more money out of the increased number of dollars.

It is practically impossible to get people to see that this is true, or to agree with it after they see it. As an illustration, suppose that you had four piles of money in currencies of different countries. The dollar pile might contain $100, while the other piles might contain 30 units or 200 units or 3,000 units of that particular currency; yet each pile could represent exactly the same amount of *money*. Decreasing the value of the dollar and giving a workman a proportionately greater number of dollars leaves him with the same amount of real money. This is a fundamental economic law that can neither be repealed nor ignored. It enforces itself and when we try to ignore it, the automatic enforcement is very painful.

The principal stimulation of inflation comes from the war sector of the economy, since in order to secure workmen in large quantities for war industries, ordinary economic prudence is thrown to the winds and increased wages are offered to tempt workers away from their civilian employments. This not only diminishes again the volume of civilian production, but puts in the hands of war workers an increased quantity of dollars which will be used to bid against the civilians for the available consumable goods. The only way to prevent this is to install wage and price ceilings before the damage is done, but here again political considerations come into play and economic laws are temporarily ignored. If a price ceiling is put on everything, prices can be practically stabilized, but it is impossible to put a price ceiling on goods if the workers who make those goods have no ceiling on their wages, and it is also useless to put a ceiling on wages without a ceiling on goods if the supply of goods is limited, because competitive bidding for the limited supply of goods will force prices up, to the great harm of everyone.

As a war effort is expanded, there is less and less consumer goods available for consumption by both civilian and war workers, and there must be a progressive lowering of the standard of living. This is a simple economic fact, yet incalculable political pressure is always brought to try to get around this economic law. We continue to try to think in terms of dollars instead of goods, but in wartime economy, where there is no competition and no surplus of anything, we must quit thinking in terms of dollars and think only in terms of goods. Money is, in fact, accumulated work. It is only valuable when expressed in terms of goods, and if there is a definitely limited amount of goods, it is not only impossible to make wages keep up with the cost of living, but stupid to try because we cannot live as well as we have been accustomed to if only 75 per cent or 50 per cent of the normal amount of civilian goods is available.

At this point it may be necessary to establish rationing to equalize the shortages of goods, because even if there is a price ceiling on goods and on wages, if there are definite shortages of goods, the more highly paid wage earners and the more prosperous class of business people will create a demand for bootleg goods sold at advanced prices, and if there is only a limited supply of goods to be had, this works a very real hardship on the workers in the lower income brackets. To see that everyone shares alike, it is necessary to issue ration cards which hold the rich man or the plutocratic worker down to the same amount of actual goods as the poor man can buy.

All of these observations are pointed at the economic aspects of the problem, and we believe that a wider understanding of these fundamental principles will help people to accept cheerfully the deprivations that cannot be avoided, and can only be sidestepped temporarily and with later severe penalties for the attempted avoidance.

How Do You Treat Your Callers?

By W. M. McLaurine

Secretary-Treasurer, American Cotton Manufacturers Association

PUBLIC RELATIONS is not something specific that can be used as an adjunct to business. It is not a special department that sends out propaganda or facts for community consumption. It is a personal, vital thing manifesting itself everywhere and at all times in one's business.

"Public relations is an operating philosophy, to be applied in everything your business organization does," writes Milton Wright in his book, "Public Relations for Business".

If this statement is true, and it seems reasonable to believe, then every business and administrative executive along with every worker is busy creating some kind of public opinion. This is fatalistic. The great desire of industry, when it thinks seriously, is to build a good public opinion regarding itself.

Since this is true, all of its intra-relationships, as well as its extra-relationships, must be carefully planned and executed, because there is finally some kind of public opinion formed out of the individual or composite policies of the organization. The average organization has many different types of contacts and relationships. Its method of making or handling these starts a stream of individual opinions which finally flow into the converging streams of other lines, either to be neutralized or to accentuate the prevailing opinion.

One illustration will be used to illustrate the point under discussion. The traveling salesman or visitor to the various offices of your plant or business is a builder of public opinion. Regardless of what you may think of him, what he thinks of you and your organization is the important thing for you to consider. In your opinion, some of them may be nuisances and unnecessary disturbers of routine and, doubtless, some are, but your reaction to him starts in his mind a train of thinking that can help you or harm you.

Most traveling salesmen are very congenial and intelligent men. They have to be to hold their jobs. Competition is too keen to permit dumb numbskulls on the road. They are trying to render a service to business, to the organizations they represent, and to make a living for themselves and those dependent upon them. They are honorable men. Most of them are experts and specialists. They know their products and how they perform. They render services as well as make sales. They work under pressure from the head office. They must see people and sell goods. They must keep their expense accounts down. In these days travel is becoming more and more a problem.

THIS IS the seventh of a series of short articles by Mr. McLaurine, prepared especially for "Cotton", discussing various phases of public and industrial relations work and problems of textile mills.

The series is in keeping with the current, active policy of the American Cotton Manufacturers Association in this sphere.

The salesman has the same worries that any other business man has, but he travels on with a smile and tries to carry good cheer wherever he goes. Most traveling salesmen are apostles of good will. They are good fellows.

One of them called on you or some member of your organization yesterday. How was he received? The answers that follow are the average happenings of one type of reception.

The boy or girl at the information window or desk greeted him promptly and with an expression of interest. Promptly he was told whether or not the party desired was in and when he could see him. The waiting time, if any, was reasonable and definite. He was invited at the proper time to see a man who was expecting him. Cordially, and in a business-like manner, the purpose of the call was executed.

The salesman left the organization in fine spirits and went on his way building a good public opinion for the organization wherever he went. He might not have sold the organization anything but the organization sold him a big bill of good-will and sent him away as its agent in a public relations program.

He called at the next place and entered a prison-like cell whose only connection with the inner works was a peep-hole through an opaque glass or a slit through which one could see by effecting "a squat and a grunt". It might have been made even more impersonal by the fact that there was a push-button to sound the alarm that he had arrived. Again, he might walk into an office with several people and yet no one would see him or notice him regardless of his cough or throat-clearing.

Finally, someone gave him the information that the party desired was busy and he should sit down and wait.

Waiting for a definite time is a pleasure, but waiting for an undetermined time is wearying and disturbing. Many executives and sub-executives feel that it is unbusinesslike to be able to see people promptly and efficiently. They try to impress people by the fact that they are difficult to see. Many students of management say that such tactics are an indication of weakness rather than strength, that the executive should delegate some of his responsibilities so that he can see people, or he should delegate the authority of meeting people to some person with authority to

(*Continued on page* 134)

MODERN RAYON FINISHING

Article 2 **By Kenneth H. Barnard and Arthur R. Wachter**

THIS IS the second of a series by these authors. The first installment, in the April issue, gave a general discussion of dyeing and finishing rayon fabrics—filament and spun rayon. This second section is particularly valuable, giving a detailed description of the machinery and equipment necessary for the preliminary steps, the preliminary scouring, and the dyeing, or wet processing. The next installment, to appear next month, will cover the equipment for dry processing—framing, calendering and finishing—as well as including a valuable description of the various types of chemicals used in the finishing of rayon materials . . . . . .

FEW OF US have much to say about the location and lay-out of a rayon finishing plant, as in the past it has grown up as a sort of step-daughter of the regular cotton or silk work. Today it is obvious that rayon will more and more gain the center of the stage, so a few of the plant location problems should be considered.

Among the first of these is whether it will be North or South —which usually means whether it will be put in a second-hand mill as mill properties are a drug on the market in New England or whether the project justifies spending some new money for new buildings and equipment. Another frequent corollary is whether those putting up the money are looking for a quick return on a relatively small investment or whether they are figuring on a long pull for a larger capital expenditure. The North has the experience both in labor and management, is close to the consumer and perhaps more sensitive to style trends and research, while the South enjoys lower costs, is closer to the raw materials and is aggressively progressive, particularly from a cost standpoint. The factor of good water which used to tip the scales in textile processing towards the Northeast seaboard, has now been cancelled by the success of the chemical engineer in designing and operating water treatment plants. One of their very latest advances is the production of distilled water without any distillation, but merely by treatment of the raw water with certain resins which remove selectively the basic and acidic ions leaving the water practically non-conducting.

The lay-out of an organization implies determining the exact duty to be performed by each machine and its operators and tracing the relations each has to each other. When the organization and routine have been determined, the next step is to consider the physical lay-out of divisions and rooms. This should follow and not precede the planning of duties, because the proper space and the proper fittings and furnishing can be estimated and planned only after the operations themselves are clearly laid out. The routing of material and product will entirely depend for its efficiency on the skill with which the lay-out of the equipment has been effected. Except as productive machines are actually doing work, money is not being earned.

Machinery and Equipment

The selection of operative machinery goes hand in hand with the sequence of operations. Certain principles must be observed. The first of these has to do with the path of travel of the material in process, and the second is the selection of proved and efficient equipment, so that when operative skill is applied to material, good workmanship is the result, because of a perfect balance between man-power, equipment, lay-out and also the technical processes themselves shall be conducted in the most efficient manner. Equipment and organization must always be kept tuned up to a full working pitch.

In order to make the application of these remarks more specific, we have laid out in diagram form an ideal floor plan arrangement of the finishing machinery, dyeing equipment, etc., necessary to handle a yardage of mixed rayon fabrics running two-thirds or three-quarters of a million yards a week, 40 hours, but on a three-shift basis. In doing this, two thoughts have been kept in mind; first, streamlining the flow of materials and cloth through the plant so that a minimum of handling will be required and maximum convenience for men and machines obtained, and secondly, the important consideration of future expansion.

In regard to the first point, it will be noted that all receiving and shipping of cloth are grouped on the front street side with the main office between them. The cloth moves smoothly around in a complete loop from the wet processing through either the jig dyeing or beck dyeing to the dryers. Then follows dry finishing, framing, decating and calendering, with return through the folding, inspecting, stock and final shipping rooms.

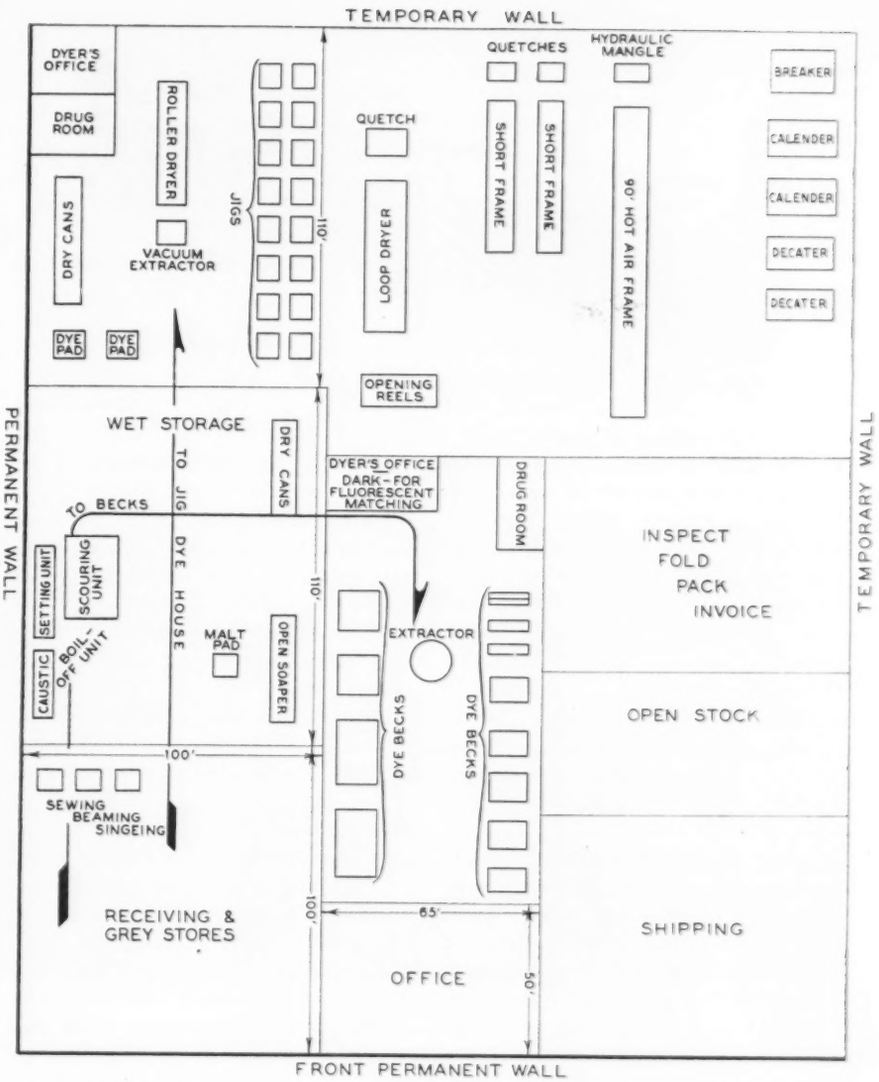
The second point—that of providing for future expansion—is an important factor often ignored in making plans. At no time should a plant be designed with attention focused only on present-day needs, because tomorrow's processes may require a complete revision of routing. The authors of this article have seen this happen too often. Witness the many changes

even in the past 20 years! For instance, previous to 1920, we had all silk fabrics, all pure dyed. Then came tin weighting which required additional floor space and equipment. Following this, lead weighting which demanded still more complicated machinery and floor space. Then, we ran the coarser rayon crepes which were quickly refined and developed into really fine fabrics.

This new rayon development soon out-moded all tin and lead weighting equipment with the exception of the silicating units, which could be converted into boil-off units. Recently, mixed rayon fabrics enter the picture. Processing these requires a still different type of boil-off equipment and as most of the original silk plants were not equipped for jig dyeing, available floor space had to be found for jigs and also for dry cans and pad dyers as well.

Now comes nylon, glass and who knows what! Only one thing is certain, and that is extreme flexibility of space and equipment will be needed in the future as illustrated by the past. For this reason we have shown two of the walls of the building as temporary—that is, room is left for their expansion if desirable. For example, the rear wall of the jig dyehouse can be removed if more space is required here. Furthermore, should finishing operations expand or change, the right rear wall here could be moved outward. In other words, the building is so designed that the only permanent walls are those in front where the main office is and on the left side where the goods are received. Some such arrangement must be considered in any logical planning of a building for modern rayon finishing.

The machinery used in rayon processing and finishing can be divided into two parts—first, that used in the preliminary scouring and dyeing, that is, the wet processing; and, secondly, that used in the framing, calendering and finishing of the goods, which is more or less dry processing. Another division could be made between the equipment used for women's wear, the lighter alpacas, romaines and the underwear fabrics, and the



The authors' lay-out for a modern rayon dyeing-finishing plant . . .

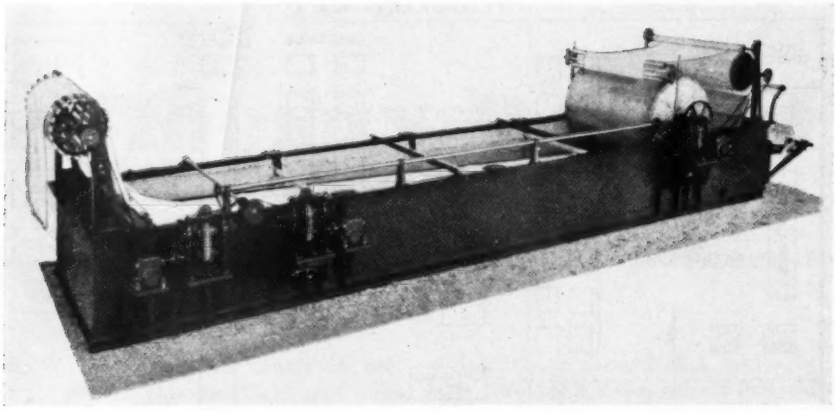
machines necessary for handling heavier men's goods—mostly spun fabrics and ladies' sports wear.

Machinery for the Boil-off

Aside from the two general classes of machinery mentioned, a very important operation is that of preparing the cloth for boil-off. That is, taking it from shipping containers, superficial examination and sewing and rolling for the boil-off operation. It is well to mention here a very efficient (both from a point of productive speed and excellence of workmanship) opening, sewing and beaming machine. This machine can be built to accommodate any width of goods and an added good feature is a measuring attachment which gives a good check on grey figures. It makes an even, smooth, wrinkle-free roll and has a butted seam sewing machine head of the rail-road type. Therefore, sewing and beaming become one operation.

Probably the most vital cog in the way of machinery is the boil-off which stands in the same relation to rayon processing that a kier does to a cotton bleacher. Now there are two good boil-off units. The first one to be described is particularly suitable for fabrics made of plied yarns, often mixtures of acetate and viscose filaments used in the alpacas and romaines. The results desired on such fabrics are a full mellow hand which means maximum shrinkage of the goods. This shrinkage must be obtained without curling the selvages. In other words, it must be controlled very carefully in the filling.

In the machine in question, the cloth passes from the roll to a pre-shrinking apron conveyor. This apron, upon which the cloth



Courtesy Van Vlaanderen Machine Co.
Fig. 1, the continuous conveyor type, full width boil-off machine . .

lies in full open width, without wrinkles, allows a good degree of pre-shrinkage, but its principle is to retard filling or width shrinkage sufficiently to prevent curled or rolled selvages. When edges on this type of cloth roll or curl, it is a physical impossibility to dye the goods without severe streakiness. This is the most important "watch-out" in processing this type of cloth.

After the goods have had their preliminary shrinkage, they are passed through a cascade of boil-off liquor at a temperature of about 180 degrees F. This cascade immerses the goods into the boil-off tank and from then they are allowed an absolute freedom for a maximum shrinkage. The machine is so constructed that the goods actually are held in suspension by the liquor and at no point is there any tension or pull. In other words, goods are boiled-off in this machine with as little tension as that given a one-yard sample cut which is held in the liquor by two strings. The goods almost float through the liquor. After passing through the boil-off liquor they are given a cool rinse (100 degrees F.), sufficient to remove soap and then finally plaited down in full open width out of the machine.

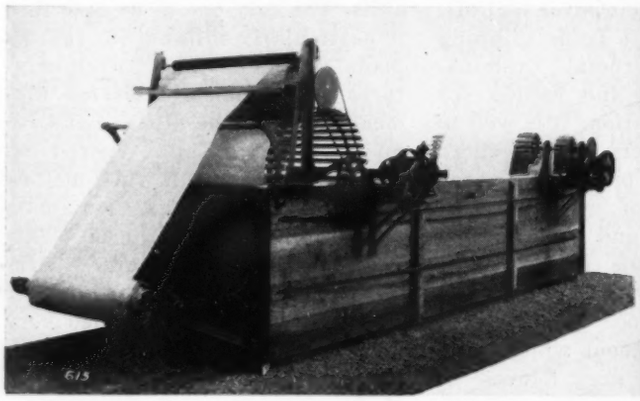
In the continuous full width conveyor type machine (see Fig. 1), the cloth is first immersed in a wet-out box containing water at 160 degrees F., and then led over two cans whose lower surfaces dip in the boil-off liquor which consists of a soap solution held at 180 degrees F. These cans are of large diameter and, of course, both are driven. The result is that the cloth, being in contact with the surface of the drum, shrinks to some extent, but not enough to curl the selvage. Before entering the bath itself, the cloth goes around a steam drum also held at 180 degrees F., and then enters a bath, being forced into it by a cascade of hot water. In the bath, it collects on a submerged traveling net apron, so that it is floated through the length of the boil-off unit under no tension whatever, permitting full shrinkage. This is the first operation which is called the fixing or setting operation. When the cloth leaves this first setting unit, it is practically fully shrunk. From this point it is still necessary to cleanse the cloth from its warp sizing. The setting tank is not a sufficient cleansing operation.

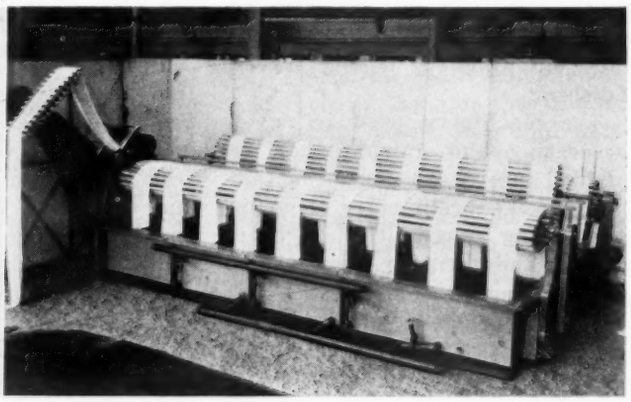
The cloth now passes through a continuous, conveyor type unit, which permits of more and additional shrinkage and absolutely no degree of tension anywhere. These conveyor units can be built to any size and number of conveyor tiers.

After passing through this boil-off liquor, goods are given a cool rinse to remove soap, or principally to reduce the high temperature from the boil-off liquors. Nowadays, very few people use soap in boiling-off these fabrics and with the use of an alkaline detergent in the amine group, in place of soap, no rinsing is wanted, just a slight cooling action.

Goods are now plaited down out of the machine and are ready for the dyeing operation. Grey cloth woven 54 inches wide will finish around 39 inches and the speed of the machine is about 40 yards per minute at best. This same machine is an excellent one for desizing wool mixes and the effect of the machine on cloths containing wool is much like that of a well-fulled worsted.

For men's wear, the continuous full width conveyor boil-off unit is recommended. This machine does not give as great a shrinkage as on the floating type, but a production of 80 yards per minute





Courtesy Van Vlaanderen Machine Co.
Left, Fig. 2, boil-off machine, originally designed as a silk silicating unit, suitable for all kinds of single-yarn goods. Right Fig. 4, rope soaper for rayon goods . . . . . .

may be obtained even on these heavier goods. There are several different types of these conveyor boil-off units, but the one originally designed as a silicating unit for silk is preferred. This type of boil-off is suitable for almost any kind of goods except those containing plied yarns. If a caustic conveyor unit is set ahead of the boil-off unit, a very satisfactory combination for running caustic shrinkage as well as scouring, is obtained. The caustic shrinkage machine consists mainly of the net conveyor belt as mentioned in describing the first type of boil-off machine but the boil-off unit suggested for this shrinkage range may be described as follows: The cloth enters the bath under two large submerged cylinders. It is in contact with these, but under little tension, the cylinders being driven, edge the cloth forward through the bath at 160 degrees F., where it ripples along until it is pulled out and is rippled through the next bath at 180 degrees F. (See Fig. 2.) Following that, it passes back and forth in a sort of zigzag motion through a still hotter soap solution and then is finally rinsed off in clear water at reduced temperatures of perhaps 100 degrees F. One such unit is good for around 72,000 yards per day.

The next step in wet processing after the boil-off is the dyeing. For plied yarn fabrics and lighter women's wear, this is done in the conventional dyebecks and for a production of 72,000 yards per day, it should be handled on the following becks:

1 beck 20′-22′, 45-50 strands, 16,000 yards per day; 2 becks 12′, 20 strands, 16,000 yards per day; 3 becks 9′, 15 strands, 18,000 yards per day; 4 becks 6′, 10 strands, 13,200 yards per day; 3 becks 4′, 8 strands, 72,000 yards per day; 2 becks 2′, 4 strands, 2400 yards per day.

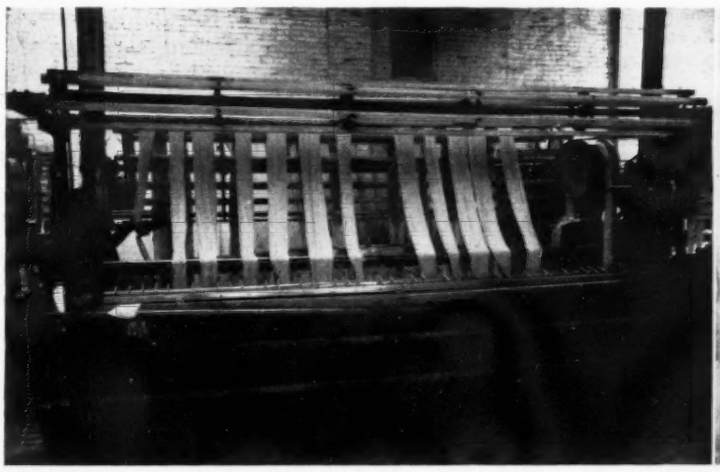
The reason for this variety in the choice of beck size is, of course, that each beck is worked at its maximum efficiency when it is fully loaded, and unfortunately, dye orders for different shades never come in fixed yardage, so that a variety of beck sizes must be available in order to utilize them to the best efficiency. A very satisfactory beck has a patented angle iron frame construction which supports the entire weight of the liquor in the beck, the beck itself being made of stainless steel. As a large beck of this material will expand and contract considerably during the temperature changes to which it is subjected, the seams will tend to open up unless it is very well supported. These remarks apply of course to the becks made of 100 per cent stainless steel. The cheaper construction is a wooden beck with a thin lining of stainless steel and this is also quite satisfactory.

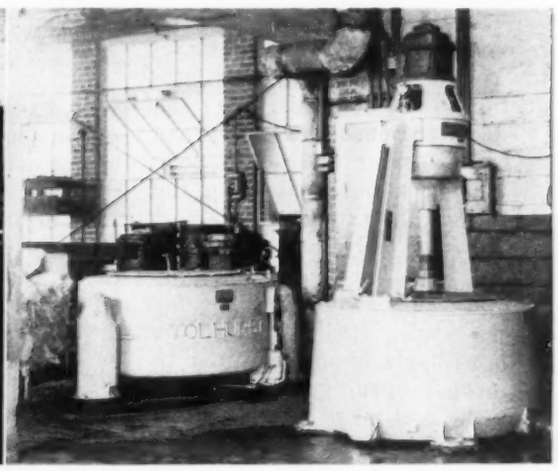
One of the authors has built an improved dye beck which saves 23 per cent of the unexhausted dye liquor. As some 15-20 per cent of the dyestuff put in is lost in the unexhausted liquor and discarded, this reduction of 23 per cent of its volume means a marked saving in operation. Furthermore, it saves 23 per cent of the steam used and reduces the time, and in addition, there is less danger of tangling and better circulation in the dyebeck.

For economical operation, particularly in larger becks, they should be fitted as continuous becks. From a practical standpoint, an attachment which is very satisfactory consists of an automatic scale arrangement which trips when the proper weight of cloth for one string has fallen on it and thus automatically feeds into the beck the proper amount of cloth to keep the strands evenly balanced. Once set, it is foolproof and the cloth continues to go round and round the beck without any attention. (See Fig. 3.)

It is obvious, of course, that continuous operation saves sewing up and unsewing separate strands and furthermore leads to great economy in subsequent finishing operations which are also made continuous. If the becks are run on 24-hour schedule, four full loads can be taken off in the course of a day, but if only one shift is run, only one load can be dyed in 8 hours.

After the dyeing operation, the cloth is extracted. Here is the first point where continuous dyeing in the beck is of advantage, as the cloth can be plaited directly into the basket of the centrifuge, whereas if the strands are dyed



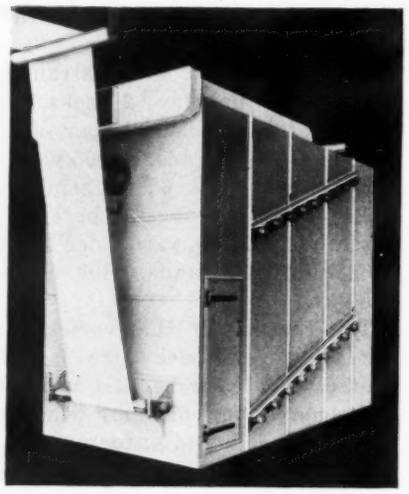


Courtesy Paterson Machine Co. *Courtesy Tolhurst Division, American Machine & Metals, Inc.*

Left, Fig. 3, a dyebeck equipped with attachment for continuous operation. Right, Fig. 5, the newer type extractor with underneath drive shown alongside of the older overhead type

separately, they have to be bagged separately and these bags loaded into the centrifuge by hand. The low motor type extractor (see Fig. 5) has much to recommend it. Compared with the older machines in which the motor was above the basket, it is evident that the newer type permits the workman full space in loading and is far safer since there is no rotating shaft in the center of the machine to catch his clothing. A further safety device is a metallic cover which prevents a workman starting the machine unless it is tightly closed over the opening. This safety development has prevented many bad accidents and has much to recommend it. One 60-inch extractor should care for a daily production of 70,000 yards.

The cloth must now be opened up before drying and this is done by placing a box containing the cloth from the extractor on a sort of octagonal turntable, just high enough from the floor so that the operator can swing it with his knees while straightening the cloth with his hands. In order to get proper opening, a long drop from the reel must be had. A distance of 32 feet is satisfactory and this means, of course, that the cloth must drop through one and probably two floors to a scray at the bottom where it is fully opened. A second reel-and-swing picks it up and plaits it down ready for drying. This process is one that is favored by the continuous dyeing in the beck, as there is very little twist put in the cloth in such a machine. However, when the same beck is run as a single-strand unit, considerable twist is put in some of the pieces and this means extra work and lost time in the opening.

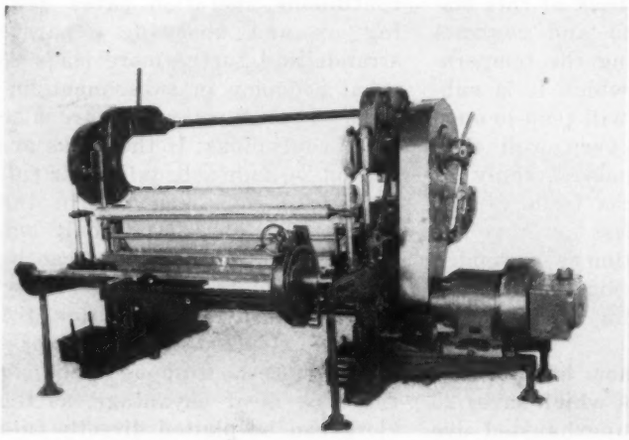


Courtesy Proctor & Schwartz, Inc.
Fig. 6, the roller dryer especially designed to replace cans . . .

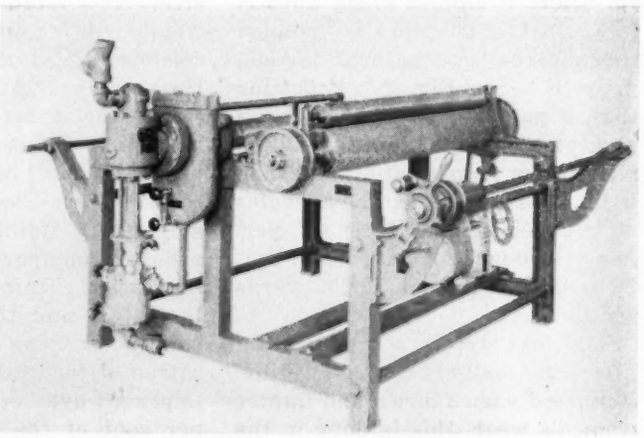
In drying the cloth, a new machine is particularly suitable for these rayon and acetate mixes. Of course, the trouble with the old dryers was that the steel sticks, on which the cloth was looped, marked it, and the rate of drying was different where the cloth hung on the metal than where it hung suspended in the air. In this new dryer, the sticks or rods are of a laminated slot construction which permits rapid cooling and furthermore, being made of Bakelite or some synthetic material, there can be no danger from iron stains. The main difference between this dryer and the old dryers is that the sticks are equipped with gears so that in travelling forward through the dryer, they are also slowly rotated. This prevents any danger of stick marks.

The dyeing of men's wear and ladies' sports wear is always done on a jig, but before dyeing, the goods are malted and a better finished hand results since scouring alone on the jig is not very satisfactory. In order to malt the goods, the enzyme is padded on the cloth with a two-roll mangle. A little trick here, which permits a thorough wetting out, is to cut quarter-inch grooves three inches apart like rings, around the bottom rubber roll. The bottom roll is generally a harder rubber than the top roll and these ring-like grooves permit the solution to wet out thoroughly and saturate the cloth so that uniform malting results. Some very puzzling cases of uneven dyeing, particularly on mixed fabrics, have been traced down to lack of proper malting. In order to remove the malt, the goods can be either handled on a jig with four to eight ends, which is rather costly; or, better, run through a short open soaper and then onto dry cans continuously, which is both cheaper and more satisfactory.

The ordinary can dryers are rather slow on heavy goods and also have the undesirable characteristics of severe tension and little opportunity for shrinkage. There is a new dryer called the roller dryer which is especially designed to replace cans and correct these defects. The cloth passes through a heated chamber inside of ducts with louvres so constructed that the hot air current is in the same direction as the



Courtesy Van Vlaanderen Machine Co.



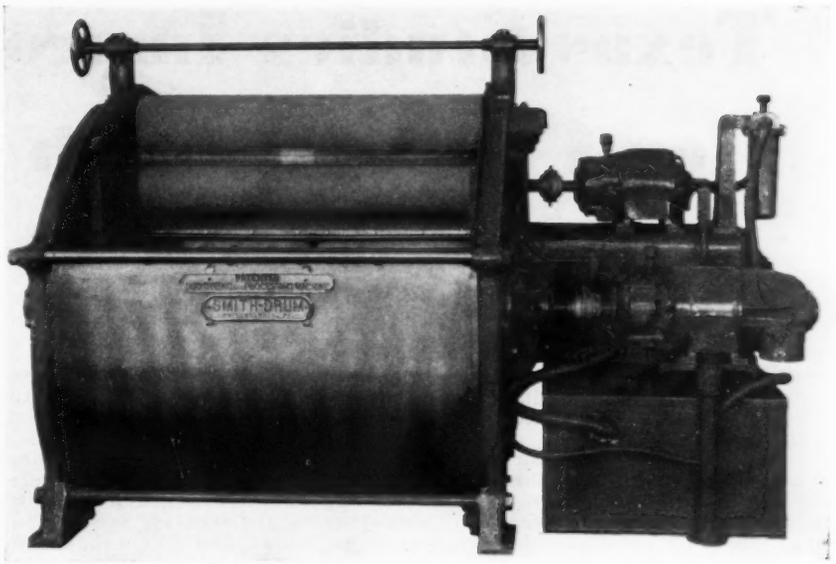
Courtesy General Machine Co.

Left, Fig. 7, an all-purpose pad machine. Right, Fig. 9, vacuum slot extractor for use ahead of the dryer .

cloth is traveling, and in a way tends to blow it through the machine. Thus there is no tension on the filling and little on the warp. There is no danger of heat blisters which one sometimes gets on can dryers. It is faster than the can dryer, but only good for heavy cloths. After drying, the cloth can be wound on a roll ready for pad or jig work. See Fig. 6.

Most men's wear fabrics and many lighter weight fabrics are first pad-dyed. In the case where direct colors are used, a good formula can give you nearly the exact shade required and it is then only necessary to give a few jig ends in order to "salt on" or set the dyeing. This is a real money and time saver. D and D shades can be dyed on the pad and diazotized and developed on the jig. Vat colors are always padded on the dye pad, dried and then reduced and oxidized on the jigs. It is, therefore, necessary to take into consideration just what types of cloth are to be run before a dye pad is purchased. An all-purpose pad machine is shown in Fig. 7.

The only satisfactory material for jigs is stainless steel and jigs for this work should be at least 54 inches wide. The modern jig is both automatic and tensionless and in general, one man can tend to four jigs. One type of jig is electrically controlled and is very smooth running, but more complicated to fix when anything gets out of order. In another type, the tension is controlled mechanically and speed is uniform, unlike the conventional jig without these devices. Once set, these modern jigs will run the cloth back and forth for whatever number of ends the machine is set, maintaining a minimum, uniform tension with no attention from the operator. Such machines are expensive—around $2300.00 each — but are well worth the price while running expensive materials. For a dyehouse running 60,000 yards per day, 16 jigs would be ample on a 24-hour basis. The jig rolls will vary in size with the weight of the cloth, but will probably average around 1,000 yards and for direct colors taking six or seven ends. Four loads a day can be taken off them.



Courtesy Duo Dyeing Machine Co.

Fig. 8, combination jig with two compartments, showing the new electric drive to give constant speed and tension on the cloth . . . . . .

Another type of jig which deserves very favorable mention is, in effect, two jigs in one, so that one end on this machine is equivalent to two ends on one ordinary jig (see Fig. 8). This is effected by building the jig in two compartments with a squeeze roll between, so that the cloth would be processed as wound on beam rolls that are placed within the separate boxes in such a position that the roll of goods can be batched, submerged, semi-submerged or completely out of the liquor. The separate boxes permit scouring in one compartment and dyeing in another, or dyeing in one and washing in the other, and the squeeze roll between prevents excess liquor being carried from one box to the other while the goods are run.

The original machine was driven by one motor with chain drives to each separate box and friction clutches. Recently, this has been improved by directly connecting each roll to a wound rotor inductor motor, while a constant speed gear motor drives the motor directly connected to the lower nip. This electric drive results in constant speed and tension on the cloth, since during winding, the motor torque increases and the speed of the roll decreases as the diameter of the roll increases, while during unwinding, the rotor winding of the motor is shorted and direct current, provided by a rectifier, is passed through the stator. This produces a torque opposed to motor rotation which varies with the speed as effected by the change in roll diameter. The result is a uniform tension on the cloth from the very first to the last inch and uniform cloth speed, although the speed of the motors varies with the diameter of the roll. The jig is fully automatic and this special electric drive is an important innovation in textile machinery.

The jig rolls, which are naturally soaking wet, must next be dried and at least a one-third greater capacity on the dryers can be obtained if a vacuum slot extractor is installed ahead of it (see Fig. 9). The proper type of dryer for these heavy goods is the roller dryer just discussed or the ordinary dry cans, if the newer type is not available.

(The next installment will continue this discussion of machinery and equipment, covering the framing, calendering and finishing departments; and will also discuss the chemicals used in rayon piece goods finishing.—The Editor.)

Moore Speaks at Textile Society of Canada

At the regular monthly meeting of the Textile Society of Canada, Western Division, in Toronto, Stephen Moore, of the Steel Heddle Mfg. Co., Providence, R. I., spoke on "Weaving in General—to Meet Wartime Developments."

Texas Studies Improvement of Her Cotton through Research

By Simon Williams
Bureau of Industrial Chemistry, University of Texas

THIS ARTICLE may be prophetic. It tells in general terms some of the plans taking form out in Texas to use research, in a practical way, to aid the vital part of the cotton-textile industry which that state comprises, as the largest grower of its raw material.

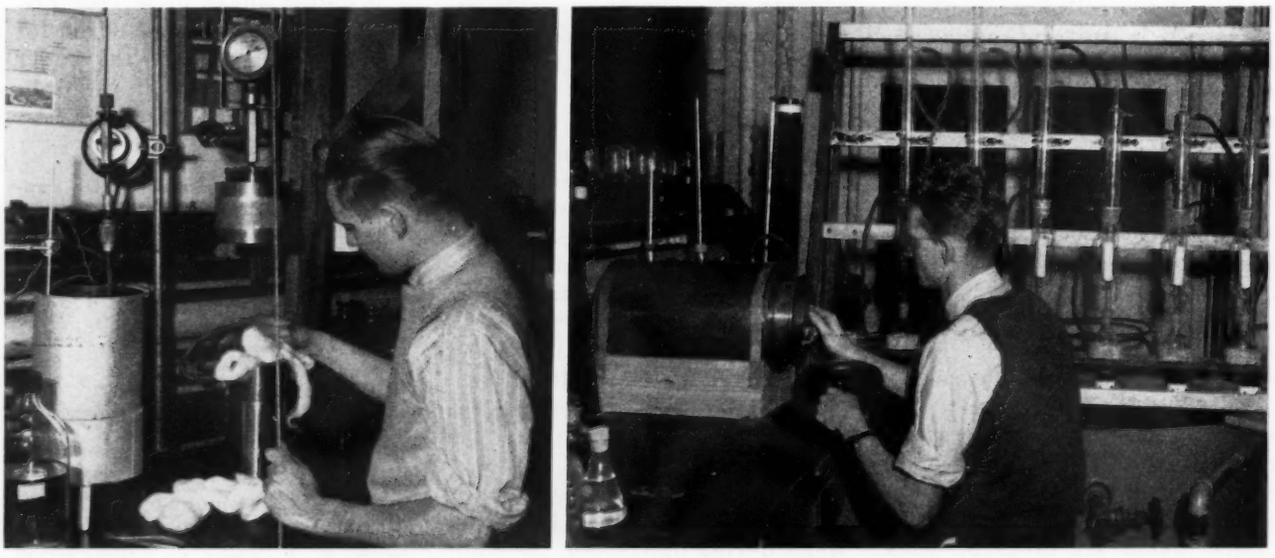
It will interest manufacturers throughout the industry to learn what has already been done in the chemical treatment of the cotton fiber, to create and develop new characteristics for spinning and weaving, and what is planned in the way of a real plant-type spinning and weaving laboratory. All of this away out there where they grow the cotton, and where they now are seriously endeavoring to bridge a gap and erase barriers by research to improve the fiber and its spinning characteristics.—The Editor.

LATE IN 1939, the Bureau of Industrial Chemistry at the University of Texas initiated a program of cotton fiber research, aimed at developing new outlets for Texas cotton. In June 1941, the Texas legislature passed the Moffett Cotton Research Bill, appropriating $250,000 for the biennial period of 1941-1943, with provisions for continuing biennial appropriations, for the "purposes of establishing cotton research facilities in Texas wherein new uses of cotton, cottonseed, and their products, . . . may be sought out and discovered and made available."

Why has Texas entered upon such a vigorous program of cotton fiber research? The answer should be obvious—survival. With world markets closed, Texas, which formerly exported over 90 per cent of its crop, must find some new outlet for its cotton if it is to justify its continued existence in the cotton producing business. With cotton farm income dropping nearly one-half billion dollars between 1923 and 1938; with farms, gins, oil mills, brokers, compresses, and shippers closing their businesses in all parts of the state, seriously affecting the social and economic bases upon which the state of Texas grew, the development of research for new uses of cotton was inevitable.

What can research do? Whatever the plan of attack, it must be a compromise between the needs of Texas and the needs of the nation in a time of war. What are these needs.

The agricultural South is now in a peculiar position. For the first time, cotton consumption promises to exceed cotton production in terms of bales, but at the same time this excessive demand, due to its peculiar war-time nature, has created a situation wherein there are serious shortages of the better staple cottons and little reduction in the huge surpluses of short staple cotton. Of a consequence, pressure is being exerted to increase the production of the long stapled varieties. Paralleling this movement, our war-time agricultural policy, aimed at feeding and clothing the peoples and armies of the United Nations, is placing pressure on the South to diversify its agriculture, with the ever-increasing production of food crops. It is an unfortunate circumstance that in the cotton belt, that land best suited to diversification is also the land capable of producing the best cotton. The stresses and strains obviously are not balanced. If we com-



Left, apparatus for treating cotton under high pressure; right, equipment for extraction and vacuum drying of cotton—as used at the University of Texas in the Bureau of Industrial Chemistry . . . . . .

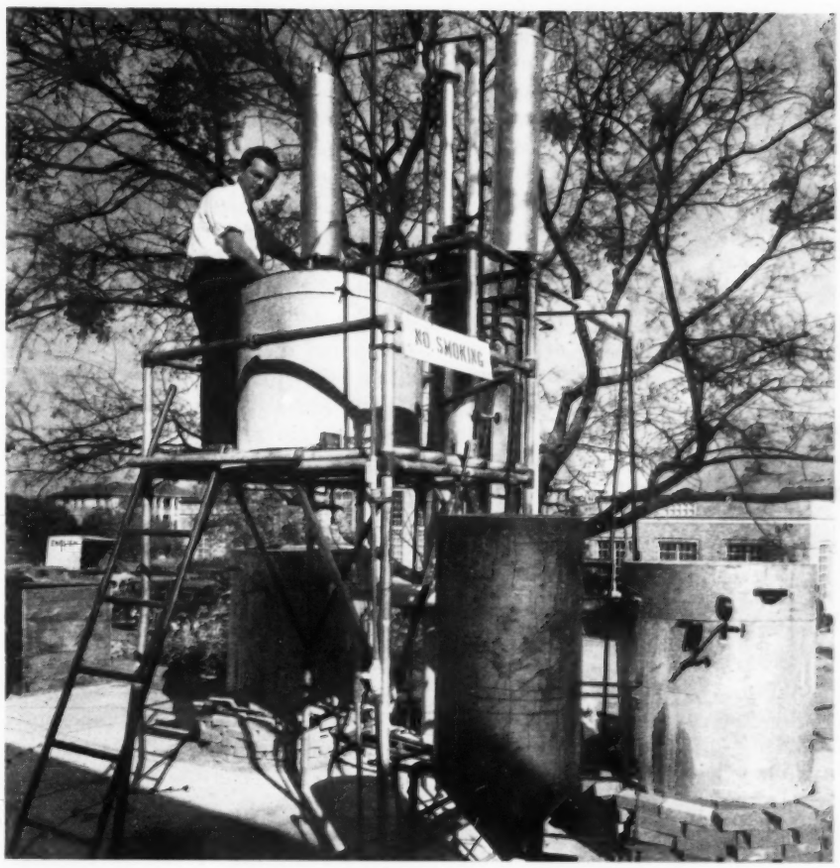
plicate this picture further by visualizing the development of industry throughout the South, increasing the competition of land and labor, we arrive at a defense problem of the greatest magnitude.

Coming back once again to Texas, what can we do? Acre for acre, Texas is being out-produced, both in quality and quantity, by other cotton producing states. Year in and year out, the preponderant share of our crop is under 1-inch in staple (80.9 percent 31/32-inch and under, 65.9 percent 15/16-inch and under in the 1940-1941 season), and it must be admitted that in the High Plains of Texas, which produces approximately one-half of the crop, no successful substitutes have been found to replace the short-stapled varieties which perennially will yield a good crop. The fact remains outstanding that the domestic cotton mills, the only new outlet for Texas cotton, are not ready, psychologically or technologically, to absorb the surplus portion of our crop.

The Gulf Coast of Texas is being industrialized and promises to become a great manufacturing center. Central and East Texas, capable of growing large quantities of fine cotton, are also adapted to other crops and the trend is towards diversification. The one area in Texas that promises to remain predominantly a cotton producer is the High Plains, using Lubbock as a focal point.

Let us examine this probability. A study of the topographical nature of the cotton belt will reveal that the Lubbock area has an outstanding advantage over every other cotton producing section in the United States. It is the one area which is completely adapted to large scale mechanized cotton farming. If we couple this with the fact that no satisfactory substitute is available for this crop, we arrive at the conclusion that with careful agricultural practice involving soil conservation and mechanization, Texas has an area capable of producing more cotton cheaper than any other section of comparable size.

Unfortunately, the quality of this cotton is such that it cannot as yet substitute for the better staple cottons grown elsewhere. It is therefore our problem to develop a technology capable of adapting this



Front view of the pilot plant for the chemical treatment of cotton at the University of Texas, as described in the accompanying article . . .

West Texas cotton to any or all of the manifold uses for cotton lint. To this program the research at the University of Texas is dedicated.

How do we go about attacking a problem of this sort? We will illustrate our methods by telling you of the major research project we now have under way.

One of the first problems we tackled involved the chemical treatment of short staple cotton in an effort to develop a hand characteristic of the Asiatic cottons now imported (approximately 100,000 bales annually) for use primarily in the manufacture of napped goods, such as blankets, flannel, robing, etc. We have had moderate success with this research, but in the course of its development we uncovered a treatment that imparted a frictional resistance to slippage on the surface of each cotton hair far in excess of that occurring naturally and it is to the development of the possibilities of this property that we are devoting our major research effort.

The reasons for the importance of this property in relation to the increased utilization of short staple cotton may be briefly outlined as follows:

The relation of cotton hair properties to the yarn made of similar cotton, and the methods of spinning and weaving best suited to bring to their most effective utilization the desirable properties of the cotton hair, have been subjects of intensive research for over 50 years. Among the accumulated data, several facts are outstanding. First, in analyzing fiber properties for cause and effect, it becomes obvious that the major effect of practically all of the physical properties of the cotton hair is concerned with the nature and amount of surface available in a sliver, roving, yarn, cord, etc. Second, it is to be observed that as this surface is rendered more efficient in resisting slippage under an applied tensile force, the stronger the resultant yarn and the more versatile the cotton in question. Finally, it may be seen that up to a theoretical maximum, the ultimate count and strength of a yarn capable of be-

ing manufactured today from a given cotton, and the strength and character of yarn of any count from a given cotton, depend essentially on the percentage of the potential effective resistance to slippage which is utilized during the spinning process.

Therefore, the factors limiting the ultimate count to which cotton of any staple length may be spun, and the strength and character of yarn of any count spun of any cotton are the effective slip-resisting surface properties of the individual fibers and the efficiency of the manufacturing techniques in utilizing these properties. As slip-resistance is increased, the effectiveness of the twist inserted during the various manufacturing processes is increased. Twist effectiveness, in turn, controls the strength of the yarn, the variations in strength exhibited by yarns of different or similar counts, made from different or similar cottons, the maximum count to which any particular type of cotton can be spun, the degree of absorbency of a yarn (important for subsequent chemical treatment) and the elastic properties of any yarn.

The chemistry and chemical engineering phases of this project are practically complete. We have had a pilot plant in operation for over a year. Over 12 bales of cotton have been prepared, and cooperative tests have been made on a variety of products with mills in various parts of the country. We now propose to establish a complete spinning and testing laboratory to develop the necessary technology to properly utilize this treated cotton with the minimum dislocation of the usual spinning procedures.

This laboratory, for the present, will be confined to testing and spinning research, the weaving equipment to be added at a later date. It has been designed to yield a *research* laboratory in which an extreme flexibility in operation combined with a maximum of control will be insured. Equipment for complete fiber, yarn and fabric analysis will be installed, covering chemical and physical testing from the microscopic to the macroscopic viewpoints.

The spinning laboratory will consist of a combination breaker and finisher picker with automatic feed regulator; a 40-inch card with several special adaptations to permit the web to be taken off without being condensed, or condensed into one to four slivers, the slivers then to be handled by either the cotton or woolen system; 4 heads of roving; short frames of roving and spinning adapted to both long draft and conventional draft, for any commercial count; a special twister capable of operating four twists at one time and sufficiently heavy to permit a wide variety in weights.

The entire laboratory, including both testing and spinning sections, will be air-conditioned for control over temperature, humidity, and electrical factors such as static electricity.

By combining these new sections with the chemical and chemical engineering sections now in operation, we propose to bring to the industry not only a new or enhanced product, but also the processing techniques needed for its proper manufacture. We are enlarging our staff, which as a research nucleus will include a fiber technologist, a textile engineer, a textile chemist and a chemical engineer. Similarly, we are going to enlarge our program of chemical modification of the cotton fiber, in each case carrying the research through the chemical, chemical engineering, and processing phases.

In conclusion, you will note that in our research, we are concentrating on the chemical modification of cotton lint at the University of Texas, utilizing spinning to evaluate our newly developed cottons. Out of the infinite variety of problems facing the cotton industry, other agencies in Texas are attacking specific problems according to their facilities. Studies of political and economic factors affecting cotton markets have been undertaken by the Bureau of Business Research at the University of Texas. Problems involved in the utilization of cottonseed and its by-products are being carried on at Texas A. & M. College. Direct spinning and weaving research, aimed at the more effective utilization of the cottons now produced in Texas and to give to the cotton mills of Texas a research service in this direction, is being developed at the textile college at Texas Technological College. This is in addition to the broad programs of cotton breeding, agricultural techniques, and insect control being variously carried on by the state-wide cotton committee of Texas and the Texas Agricultural Experiment Station. By these various means it is our hope to retain cotton as a basic agricultural commodity of Texas and at the same time better orient this cotton economy to the balanced agricultural program necessary for the South as a whole.

New Fellowship

Hercules Powder Company, Wilmington, Del., has announced the establishment of a fellowship, to be known as the Pine Chemicals Fellowship, at Mellon Institute of Industrial Research at the University of Pittsburgh for the year 1942. Dr. George B. Feild of the Institute will be the fellow.

The purpose of the fellowship will be to develop new uses for rosins, and will emphasize applications of these materials in the war effort. The fellowship continues the company's policy of expanding the uses of naval stores products, turpentine, pine oil, and rosin, and the products which may be derived from these basic chemical materials.

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Aralac Production to Be Increased

By July or August it is expected that production of "Aralac" will be increased from 500,000 pounds to around 800,000 pounds per month, according to James Bruce, president of Aralac, Inc. Enlarged production capacity was made necessary due to increasing demands of the textile industry.

"Aralac" will appear in the next few months in sports apparel for men and women, coatings, woolens, men's hosiery, knitted outerwear, blankets, chair cushions, comforters and pillows. It has been used for the past two years in men's and women's fur felt hats.

Aralac at this time is a blending fiber only and is not used 100 per cent in any field, other than as filling for comforters, chair cushions and the like. Its resiliency permits it to be used in this field competitively with wool and with feather and down blends.

Aralac's Taftville plant was originally designed to produce at the rate of 300,000 pounds per month. This production figure was progressively increased to 400,000 pounds after the first six or eight months of operation and two months later was increased to the present rate of 500,000 pounds a month. New machinery and equipment now being installed will permit the company to reach the 800,000 pounds a month figure.

A. C. M. A. Meeting in Atlanta

ATLANTA was the mecca for the southern cotton-textile industry and representatives of allied trades on May 1 and 2, when the 46th annual convention of the American Cotton Manufacturers Association brought to the Biltmore Hotel more than 600 delegates. This huge crowd heard a well-designed program of information and plans, keyed to the prevailing conditions of war and their effects upon the textile industry, and learned of concerted and carefully laid plans for the strengthened continuance in behalf of cotton and its products when the end of the current stimulus of war demands ceases.

Herman Cone, president of Proximity Mfg. Company, Greensboro, N. C., was elected president of the association for the coming year, succeeding William N. Banks, president of Grantville (Ga.) Mills, who directed the affairs of the association so ably during the past year and planned and executed, with Secretary W. M. McLaurine, the valuable and enjoyable program at the Atlanta meeting. (A word picture and biography of the new president, Mr. Cone, appears on page 57 of this issue of COTTON.)

Hugh M. Comer, executive vice-president of Avondale Mills, Sylacauga, Ala., was elevated to first vice-president of the association, and James A. Chapman, president of Inman (S. C.) Mills, was made second vice-president. W. M. McLaurine was re-elected as secretary-treasurer. Ellison S. McKissick, Alice Mfg. Co., Easley, S. C., and S. M. Beattie, Woodside Cotton Mills Co., Greenville, S. C., were added to the board of directors, and Ernest Rees, Elk Cotton Mills, Fayetteville, Tenn.; C. A. Cannon, Cannon Mfg. Co., Kannapolis, N. C.; and Norman E. Elsas, Fulton Bag & Cotton Mills, Atlanta, Ga., were re-elected to membership on the board.

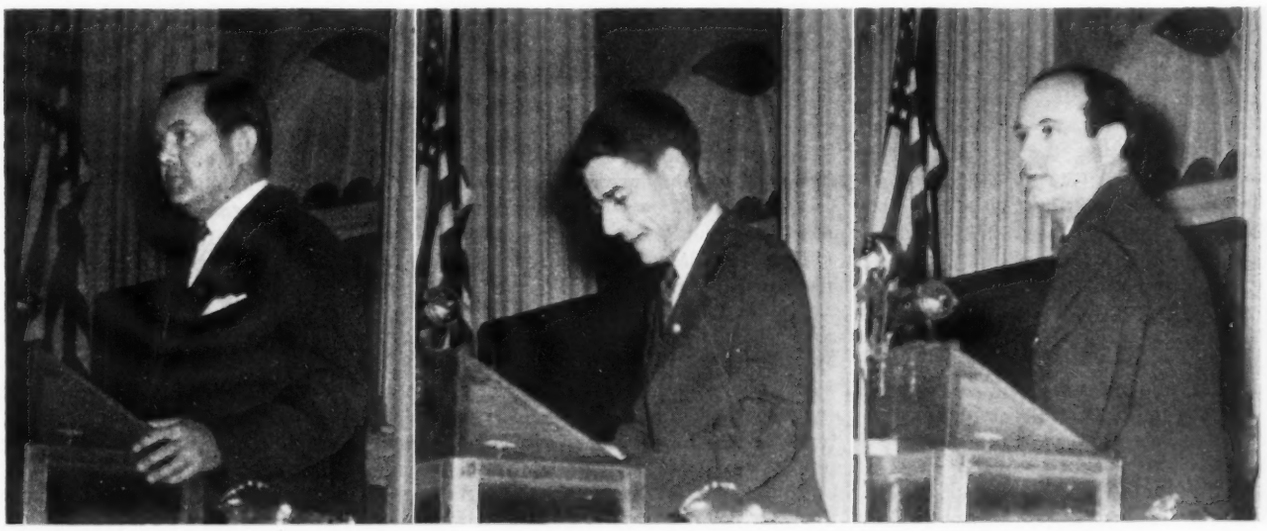
A resolution, prepared by the board of government, recommended inclusion in an amendment to the Southern Mill Rules of 1935 making allowance to the seller of cotton of 7 pounds per bale on cotton wrapped in cotton bagging. This resolution was to be made effective after adoption by a group of other associations interested in cotton sale and purchase. It paves the way toward application of the net weight principle as applied to cotton sale, for which there is now pending in Congress the Fulmer bill requiring the sale of cotton on a net weight basis.

The two-day program in Atlanta was replete with stimulating and informative addresses and reports covering a wide range of pertinent and timely subjects. Previous to the opening of the convention on Friday morning, May 1, Dr. Claudius T. Murchison, president of The Cotton-Textile Institute, conducted a meeting of the co-ordination conference of textile trade association executives, attended by the active heads of the various trade associations in the industry.

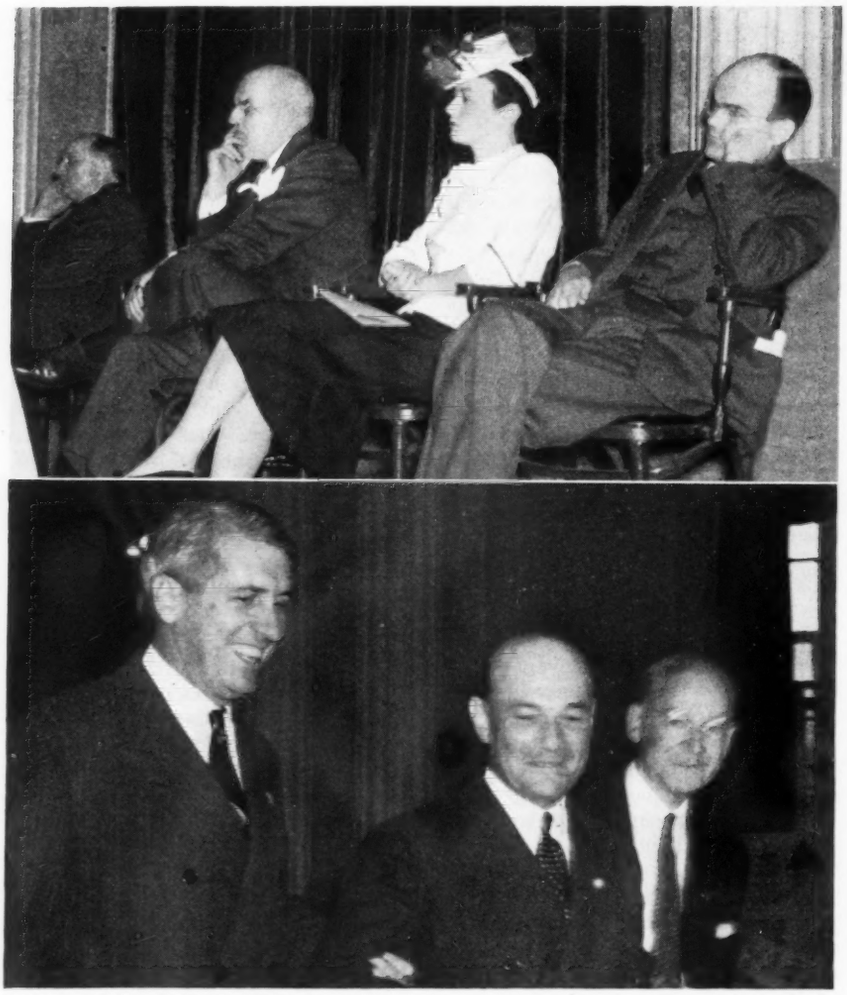
President Banks opened the annual convention on Friday morning. Robert Strickland, president of the Trust Co. of Georgia, Atlanta, welcomed the visitors, and the response was made by George M. Wright, president of Republic Cotton Mills, Great Falls, S. C.

Mr. Banks then delivered the annual address of the president. The report of the secretary-treasurer, Mr. McLaurine, furnished this year in printed form, covered the activities of the association in detail, and in his own address, Mr. Banks dealt instead with matters of general importance. His address was a forceful, dramatic review of recent events, and a recounting of the contributions the textile industry has made and is making in the country's war effort.

This was the first meeting of the association since its alliance with the National Cotton Council of America as the sixth element in that organization dedicated to the increased use of domestically-produced cotton. Mr. Banks, as president of the A.C.M.A., had been largely instrumental in effectuating the union and in securing the support of individual mills in the council's promotion program, as well as in unifying the efforts of the council and those of the Cotton-Textile Institute into a joint promotion and research program, and he told in detail of the work of this group and of its importance, and pled for continued support of its efforts in providing a sound foundation of continued increased consumption of cotton when the current war demand ceases.



Three of the convention speakers. Left to right, Robert Strickland, delivering the address of welcome; George M. Wright, of Great Falls, S. C., responding in behalf of the visitors; and Ed Lipscomb, conducting the outstanding session on research and promotion for cotton on Friday afternoon



Top, an interested group at the promotion-research session. Left to right, President William N. Banks, Charles K. Everett, Virginia Jewel, and M. K. Horne, Jr. Below, President-Elect Herman Cone being escorted to the chair Saturday morning by Hugh M. Comer, first vice-president-elect and Past-President Robert E. Henry . . . . . .

The second speaker on Friday morning was John F. Chapman, foreign editor of *Business Week*, who presented a brilliant analysis of the international war situation. He traced the development of the Nazi and Japanese war patterns, stressing the need for all-out production in the United States as the decisive factor for victory, and predicted the most important developments in the war strategy will come within the next few weeks.

Session on Promotion and Research

William P. Witherow, president of Blaw-Knox Company, Pittsburgh, Pa. and president of the National Association of Manufacturers, was the final speaker on Friday morning. He discussed general economic affairs in relation to the war effort, and affected by it, and cited the contributions being made by industrial management and labor in the war program.

Traditionally, Friday afternoon at the American association convention is given over to entertainment and sports. This year, President Banks decided, in view of war conditions, to eliminate any formalized program of entertainment, and arranged instead for Friday afternoon a session on promotion and research in behalf of cotton, and this was a most informative and encouraging program. In opening it, Mr. Banks stressed the importance of research and promotion, declaring these to be essential handmaidens of success in retaining the prevailing increased consumption of cotton. He is convinced that through an intelligent program of research and promotion, consumption by the mills of this country can within a few years be developed to cover the entire cotton crop of this country. He told of how the programs of The Cotton-Textile Institute and the National Cotton Council of America had, during the past year or so, been co-ordinated into a strengthened, joint compaign of promotion and research, and turned the meeting over to Ed Lipscomb, director of domestic consumption of the council, who handled the remainder of the afternoon's program.

Mr. Lipscomb presented four specialists connected with the joint council-institute program of research and promotion: M. K. Horne, Jr., director of research of the council, who told of the work in fundamental and scientific research in behalf of extended and improved uses of cotton being carried on by the Cotton Research Council at the Mellon Institute and elsewhere; and John T. Wigington, director of research of the institute, who, with headquarters at Clemson, S. C., is co-ordinating research efforts and setting up a clearing house of information on research activities and methods which will serve the mills more specifically from the practical manufacturing standpoint.

Miss Virginia Jewel, fashion director of the institute and council, succinctly described the work of her department in the field of fashion, demonstrating that this work is concretely and tangibly serving the industry in the field of fashion, and citing instances to show that this phase of the work is operated on a sound, dollars-and-cents value basis. Charles K. Everett, director of merchandising of the institute, discussed specifically plans for National Cotton Week, May 15-23, presenting to the association one of the presentations in behalf of this annual event that is prepared for retailers throughout the nation in stimulating participation in National Cotton Week and in making it of the fullest practical value to the distributing as well as the producing trades.

Discussing the broad phases of the program of promotion, Mr. Lipscomb described the current campaign in detail, providing each delegate with a "kit" including the literature and advertising material being used, such as reproductions of the advertisements appearing this summer in leading national fashion and home magazines stressing the characteristics and virtues of cotton. This campaign, emphasizing the features of cotton which give cotton fabrics freshness and cleanliness, is keyed to a slogan "Cotton Freshness for Fighting Trim".

Mr. Lipscomb described how, in the face of unprecendented demand and consumption of cotton now existing as a direct and an indirect result of the war, it is essential that the industry operate an intelligent campaign that will retain these newly and easily found markets in the days when the impetus of war uses and spending, with the concomitant shortages of other materials, will have disappeared. He submitted the program and plans of the joint council-institute work as the

means of achieving this, and presented indisputable evidence calling for the unqualified and enthusiastic support of it by the mills, along with the other elements in the industry.

Annual Banquet Friday Evening

The annual banquet of the association, the only scheduled entertainment for the whole group, was held on Friday evening, at the Atlanta Athletic Club. The delegates were transported to and from the hotel by special buses. President Banks was toastmaster. The only speaker was Dr. Pierce Harris, pastor of the First Methodist Church of Atlanta, who delivered an outstandingly interesting and stimulating inspirational address. Plantation music and entertainment was provided by an all-negro cast and orchestra, and many of the delegates enjoyed dancing after the banquet program.

Usually, the final session of the convention on Saturday morning is primarily a business meeting, for the transaction of the routine affairs of the association, but this time, the association officers provided an exceptionally fine set of addresses by distinguished figures in the industry. The first was by Dr. Murchison, president of The Cotton-Textile Institute, who gave a brief report on developments in Washington as regards their effects on the mills. He said that out of the welter of orders and regulations emanating from Washington, it seems clear that certain national policies are being pretty well formulated with respect to prices, profits, labor and agriculture, and that problems from here on will be largely administrative rather than executive. He felt that there will be ways effected to stabilize conditions in these several fields that will be indirect rather than resorting to further specific laws.

There are three particular situations which Dr. Murchison cited as examples of the effective interest and work of the industry's representatives in Washington. One of these is the provision under the Walsh-Healey act prohibiting the employment of females under 18 years of age in the production of government contracts. Dr. Murchison pointed out this provision was made in a time of serious unemployment, and in an effort to spread work, and that currently steps are being taken that should shortly recognize the emergency situation, particularly the shortage of labor in cotton-textile plants, so that employment of girls 16 and 17 years of age will be possible on government orders, conforming to the regulations of the wage-and-hour act, whose prohibition applies to employees under 16 years of age. The second point is the difficulty, under present requirements for time-and-one-half pay for employees who desire to spend more than the statutory 40 hours per week in the plant in order to learn how to run better jobs, and Dr. Murchison indicated the possibility of some early relief from the restrictions on this point. Thirdly, he called attention to the present lack of protection to sub-contractors on government business. Many industries, such as cotton mills, he pointed out, have converted the larger proportion of their capacity to government and war work without being the prime contractors with the government, acting instead as sub-contractors for prime suppliers who do have the contract. The total amount of this subcontracting work, he said, would easily run well over $70,000,000,000; these sub-contractors are without the protection against cancellation which is given the prime contractors through which their products go to the government. Dr. Murchison feels that soon, some such protection will be given the sub-contractor against the time, at the termination of the war effort, to prevent demoralization of the situation at that time.

A group enjoying one of the many stories told by Colonel William D. Anderson in the lighter side of his address at the Saturday morning session. Left to right, Walter S. Montgomery, Gerrish H. Milliken, Major Lewis of Philadelphia, Marshall C. Stone, of Gainesville, and George M. Wright, of Great Falls, S. C.

William D. Anderson, chairman of Bibb Manufacturing Company, Macon, Ga., past president of the American Cotton Manufacturers Association, and recognized as the industry's outstanding orator, spoke on the Saturday morning program following Dr. Murchison. Regaling the audience with countless southern stories, Mr. Anderson concluded with a dramatic and stirring oration on the spirit of America which brought the entire audience spontaneously to its feet in respect and appreciation as he concluded.

W. M. McLaurine, secretary-treasurer of the association, was scheduled on the Saturday morning program for an address on industrial and public relations. During the last year, Mr. McLaurine has devoted a major portion of his time and efforts to the building of a program of public-industrial relations for the industry, and his prepared address was a thorough and comprehensive discussion of the subject and of the program. Due to the shortness of time, Mr. McLaurine spoke very briefly, and Mr. Banks announced that his prepared address has been sent to the membership and that it is available to anyone interested, at the association's offices, 1206 Liberty Life Building, Charlotte, N. C.

In the election of officers, the final item of business on the program, Robert E. Henry presented the report of the nominating committee, which was accepted with the election results announced at the beginning of this story. Herman Cone's first official act as president of the association was to recognize Fuller E. Callaway, Jr., who in behalf of the association, presented to Retiring President Banks a handsome silver bowl as a token of esteem and appreciation from the membership to him for his willing, effective service as its president.

There was only a small contingent of ladies at the convention. They attended the annual banquet, and were given a tea at Brookhaven Country Club on Friday afternoon and a bridge party on Saturday morning, by a committee of local ladies under the chairmanship of Mrs. T. M. Forbes.

Alabama Men Cover Weaving and Slashing; Hear Sherman Rogers

AN INSPIRATIONAL ADDRESS by Sherman Rogers, and a brief but meaty discussion on several problems relating to slashing and weaving, featured the spring meeting of the Alabama Textile Operating Executives, held in Langdon Hall, at Alabama Polytechnic Institute, Auburn, Ala., on Saturday morning, April 25. This organization, youngest of the open-forum discussion groups in the cotton-textile industry, is headed by Frank K. Petrea, superintendent, Samoset Cotton Mills, Talladega, Ala., as general chairman, and Ben H. Crawford, assistant professor of textiles at Auburn, as secretary-treasurer. At the meeting last month, there was a good attendance of Alabama and Georgia superintendents and overseers.

The discussion period was ably led, with Fred F. Phillips, vice-president, Buck Creek Cotton Mills, Siluria, Ala., conducting the session on slashing, and T. H. Floyd, superintendent, Tallassee (Ala.) Mills, leading the weaving discussion.

The first slashing question was, "At what place on the slasher does the most stretch occur? What can be done to obtain a uniform stretch or elasticity in sized yarn when a difference in stretch from end to end on the same warp occurs?"

Stretch on Slashers

"We get our greatest stretch between the stretch control roll (on the new high-speed slasher) and the delivery roll," reported Oliver Smith, of Pepperell Mfg. Co., Opelika, Ala., "with no stretch at all between the delivery roll and the loom beams, and a slight stretch in the section beams. Our total stretch between the stretch control roll and the delivery roll is 1.8 per cent." Mr. Smith added that this is a positively-driven machine. He had made no tests on stretch without the positive drive.

Chairman Phillips brought out that it seems to be general opinion that the greatest stretch comes between the last roll in the size box and the face of the cylinder, and said the idea had been advanced that the yarn, being wet there, is subject to more stress and stretch than elsewhere. He said this point was academic, because it would be difficult to measure stretch at this point.

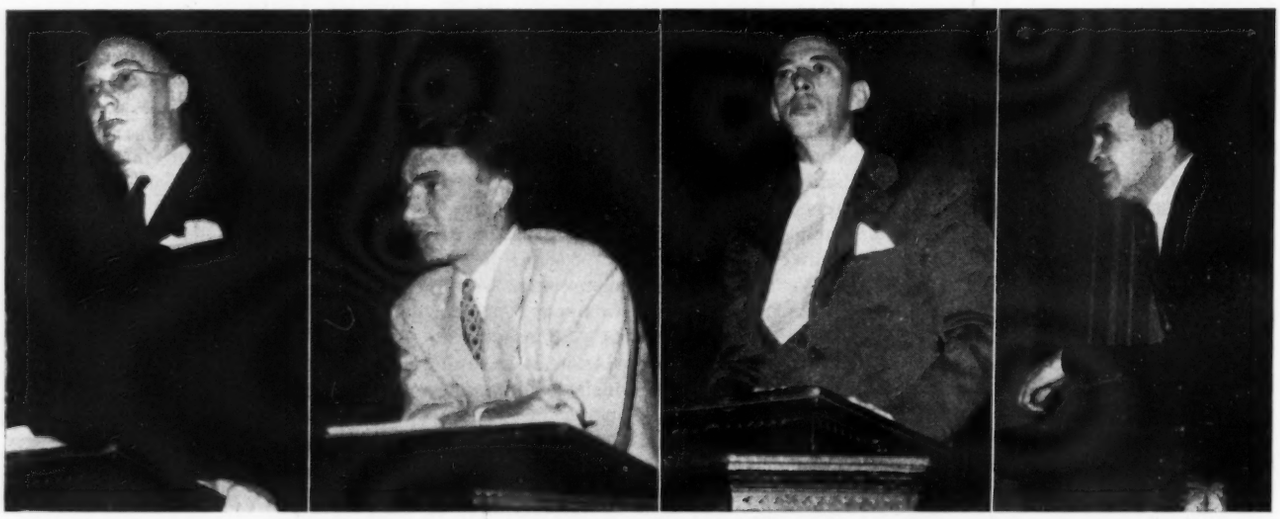
J. O. Bolt, overseer of slashing, Lanett (Ala.) Division of the West Point Mfg. Co., was called on, but said he could add nothing further to the discussion; that it is between the size box and delivery roll that he gets the greatest stretch. W. B. Kitchings, Alabama Mills, Inc., concurred and, taking up the likely causes of undue and uneven stretch, said, "the section beams might be out of line, or the spooling equipment may be causing it, or faulty spinning"; that if uneven stretch shows up on the slasher it must have been caused in some previous process, such as in the spinning, or from such a thing as section beams dragging or "loping". In trying to even up the tension in the warp he said they go all the way back to the spinning from the warpers, checking up on the tension, looking out for beam arbors being bent out of line, etc.

"In other words," summarized Mr. Phillips, "your idea is that it cannot be controlled at the slasher; it is a matter of going back to the beginning. I think we are generally agreed that stretch cannot be controlled on the slasher as far as the individual ends are concerned and that it is a matter of going back to the preparation of the yarn."

Three-Cylinder Slashers

The next question asked, "What results have you obtained in the weave room or the slasher room by using a third cylinder on your slasher?" This referred to the installation of an addi-

Report and photos by Robert W. Philip.



Left to right, T. H. Floyd, of Tallassee, who led the weaving discussion at Auburn; Fred F. Phillips, of Siluria, chairman of the slashing discussion; Ben H. Crawford, of Auburn textile school, the secretary-treasurer; and Sherman Rogers, of Birmingham, who delivered the principal address . . . . . .

tional 7-foot or 5-foot cylinder to the drying portion of the conventional two-cylinder slasher.

Calvin Warren, reporting for Tallassee Mills on results from the addition of a third cylinder, said the outstanding effect was an increase in production; "we were able to increase the ounces dried per minute from 95 to 142, an increase of approximately 49.5 per cent. Our slashers now run as high as 60 yards a minute. We found that in connection with installing the third cylinder it was necessary to re-condition the machine all over, line and level it, and install ball bearings; we would have been unable to get to the higher speed without these improvements.

"Immediately after we put on the third cylinder and went to the higher speed we had some difficulty with over-dried warps, and later we had difficulty with over-sized yarns after the machines had been speeded up, but after adjusting the size mix and the moisture content we have gotten good results." He explained that "over-dried warps" meant the yarn had stayed on the cylinder too long and that "over-sized warps" came before the immersion roll and squeeze roll had been reconditioned to take care of the new situation. Their yarn numbers run from 5s to 27s.

Mr. Floyd, superintendent at Tallassee, supplemented this report by saying that, "before we speeded up by putting on the third cylinder, the slasher room was an acute bottleneck in our production and that is why we went into the matter. As Mr. Warren said, we found after we went into it that we had to make a lot of improvements, increasing the quality of the work from the warpers, improving the size mix, and many other improvements; in other words, in putting on the third cylinder we had to do better work all of the way through." He said he felt the third-cylinder job would be justified through the improvements it required along this line, independent of the increase in production it produced.

"At our Pell City plant on blue denims, we put on a third cylinder, and now have two 5-foot and one 7-foot cylinders," reported Joe Hyde, superintendent of weaving for Avondale Mills, "and we increased the slasher production by about 10 yards a minute, or 33⅓ per cent."

Mr. Phillips asked whether anyone present had added the third cylinder on work in the range of 30s warp, in order to develop the point of whether the advantages gained on coarser numbers would apply to counts in the range of 30s to 40s which, to this group, were thought of as being "fine numbers". Emmet Warren, assistant vice-president, Avondale Mills, said they had never applied it on their finer numbers as they felt they would not gain anything from it on warps of 40s yarn and finer, because "you must run the slasher just fast enough to dry it, and there is not so much to be gained therefore on the finer numbers unless, of course, you are dealing with very high sley warps." In connection with the Pell City installation reported by Mr. Hyde, Mr. Warren made the further point that it was necessary for them to install good instruments on the cooking kettles and size boxes, and this had produced improved results for them. Mr. Hyde said they had tried a third cylinder on 30s warp but had particular trouble with the selvages rolling at the higher speed.

On the front row in this group at the Auburn meeting are seen, extreme right, Herbert H. Hughes, superintendent, Swift Manufacturing Co., Columbus, Ga., and some of his men

Changing Size Formula for Heavier Warp

There was a brief discussion on the third question, "What changes have to be made in size formulas and slasher set-up when changing from fine and medium count to coarse yarn?" Stuart McRae, of the Alexander City plant of Avondale Mills, was asked to discuss this, and said they had no fine yarns, but had gone to the third cylinder application. Mr. Phillips asked whether any change in size formula had been necessary, and Mr. McRae explained that they mix the size for their several slashers in a common kettle, and had made no change, but that if they had had individual kettles for each slasher they probably would have made some adjustments in the formula. They apply about 10 to 12 per cent size on 11.25s and 16.25s warp. Mr. Warren expressed the opinion that if a mill went from 30s to 10s warp it would be necessary to make some changes in the formula; otherwise the warp would have too much starch in it. Herbert H. Hughes, superintendent, Swift Mfg. Company, Columbus, Ga., was called on, and said his mill is regularly on colored, coarse numbers, but that recently they have been producing yarns still coarser, and undyed, and that on the white, coarser warps, he finds it necessary to use a little less concentration of the starch, for there is a difference in the take-up of the starch. He explained that on "wet sets" (slashing dyed yarn) it is necessary to use more starch than on grey yarn.

Joe Hyde said once he was running 22s and 13s warps, and that where he put 240 pounds of starch to 100 gallons of water for the 22s, he used only 150 pounds of starch on the 13s in order to get on the same percentage of size.

"I haven't fooled around in the slasher room much," said L. D. Sayers of Tallassee, "but I think this is just like a great many other questions: it is hard to answer. The amount of starch that will work with one compound will not work with another—and I have yet to see the compound that wasn't 'the best in the world'."

Chairman Phillips declared that recently his mill had changed considerable production onto coarser fabrics for defense production, and that contrary to the opinions expressed at the meeting, he had not yet made any change in the size formula. He confessed that perhaps he might be forced to change due to too much additional shedding and excessive use of starch, but for the present he was making no change.

Methods of Cleaning Looms

In opening the discussion on weaving, Mr. Floyd presented as the first question: "Do you blow off or by other means clean your looms with the warps in them? Give system employed; how often cleaned; does your system reduce fire hazard; and do you have excessive oil spots due to cleaning when the loom is running?"

George Harris, production manager, Fairfax (Ala.) Mill Division of West Point Mfg. Co., reported that on their

double-beam towel looms, they clean off by air once every 8 hours with the warps in the loom, and when the ground warp runs out they clean the loom off with mineral spirits. He explained most of their goods are later bleached so that by using a good grease-remover the problem of oil spots is not especially serious with them.

Mr. Floyd declared that in his opinion a mill should endeavor to keep a loom clean all of the time—clean enough to where it will stay clean, so that when a fire breaks out it will not spread to the next loom. He admitted he saw several smiles in the audience at this statement, but declared it should be an objective to work to.

Answering a question, Mr. Harris said they stop off the loom being cleaned on their 8-hour blow-off. L. D. Sayers said, "I do not believe you should have to stop them off; you should keep your looms clean enough so you can clean them while they are running, and I believe you can do this provided you teach the fellow *how* to blow them off. Yes, that will cost more money, but I believe you will get it back in reduction of fire hazard and oil consumption and cleaner and better work, and I think it would be money well spent. I believe if you can keep a spinning frame clean that you should be able to keep a loom clean." He added that another important thing is to instruct the oilers how to lubricate the loom properly.

H. G. Hodge, overseer of weaving, Muscogee Mfg. Co., Columbus, Ga., was called on, and said they are continually fighting the loom cleaning problem but haven't got it solved. He said they have less size on the warps on their towel looms and have less trouble cleaning them than on the ticking looms.

George Harris reported they have one cleaner for 180 looms. Mr. Hodge said they have 60 looms to a cleaner, and clean once each shift. Mr. Vickers of Avondale Mills, Alexander City, reported the use of women for blowing off, and they clean once every 8 hours on two shifts but do not clean or blow off on the third shift, and that a man mops off the loom when the warp runs out. On Draper heavy duck looms, reported W. L. Underwood, overseer of weaving at Shawmut (Ala.) Division, West Point Mfg. Co., they let the weavers blow out the drop wires every 8 hours, and when the warp runs out the loom gets a good cleaning, and on the C. & K. looms "we fan them off and mop them off." B. E. Willingham, overseer of weaving, Lanett (Ala.) Division of the company, reported that, "we blow off about once every 8 hours, and do not stop the loom to do it. We have 120 narrow looms and 100 wide looms to the cleaner."

Increasing Life of Shuttles

The next weaving question read: "What should be the life of a shuttle, expressed in loom hours, on 32-inch E Model Draper looms running three shifts on medium weight fabrics? What can be done to increase the life of a shuttle? What has been your experience in using a long straight-edge reaching from one end-lay plate to the other end-lay plate when lining looms?"

Mr. Golden, of Pepperell Mfg. Co., Opelika, Ala., reported a test on 30-inch E Model looms on pillow tubing. On one section of 88 looms, keeping an accurate record of the shuttles used over a 26-week period, he found the average life to be 4,058 hours. He explained that on this section there were 5 looms that didn't use any shuttles during the test period, and some others used as high as 10 shuttles. The breakdown of the test showed that:

5 looms	used	5.7% of the shuttles
20 looms	used	22.7% of the shuttles
32 looms	used	36.5% of the shuttles
16 looms	used	18.2% of the shuttles
10 looms	used	11.4% of the shuttles
2 looms	used	2.3% of the shuttles
2 looms	used	2.3% of the shuttles
1 loom	used	1.1% of the shuttles

Mr. Golden said, on the subject of increasing shuttle life, that they do not let the fixers put pasteboard behind the box plates. The second hand only can write an order for a new shuttle, and they have a head loom fixer who checks each loom to see that it is in proper condition before a new shuttle is allowed to be put in a loom.

"The life of a shuttle depends on how it is put in," said Joe Hyde. "In part of our mills we have the looms lined, play taken out of the rocker shaft, put on new race boards, line up the parallel blocks, take the back box off and dress it up with emery cloth. That will give a longer life to the shuttle. The second hand inspects every shuttle, and has the loom lined up before he gives an order for a new shuttle." He reported a shuttle consumption of .8 shuttle per year, 120 hours a week operation. Mr. Golden brought out that bad reeds cut down on the life of the shuttle, and recommended careful inspection of reeds, not only upon receipt from the supplier, but after they have run a while as well.

Louis Burke, of Muscogee Mfg. Co., reported a test on 224 looms with 8¾-inch quills, and found an average shuttle life of 5,800 hours. He said when they changed to a larger shuttle they overhauled the looms thoroughly. Mr. Floyd asked Mr. Burke whether in going from the 8-inch to the 8¾-inch quill he experienced any more trouble with broken quills and broken filling. Mr. Burke said they did have more difficulty on these points with the larger quill, but did not know whether this was due to the change, or to the quality of the quill being used.

B. E. Willingham reported complete satisfaction at Lanett with the use of the long straight-edge, which he said was developed by Professor Crawford at Auburn, in lining looms. He reported an average life of 3,200 loom hours on shuttles on wide looms, and 4,800 hours on 32-inch looms. He keeps a record of the shuttle use on each section, but declared, "we have just a few that wear out; most of them are broken."

The question of greater quill and filling breakage with the 8¾-inch quill was brought up, and it seemed to be the general opinion that since the loom in which this larger shuttle is usually run operates at a higher speed, it is this higher speed that produces the increased breakage rather than the size of the quill and shuttle.

At the conclusion of the practical discussion, the meeting heard a stimulating address on current conditions by Sherman Rogers, author, economist and industrial relations counselor, now residing in Birmingham, Ala., on the subject of current and prospective national and international developments.

At Auburn. The three figures at left are Ben Bailey, of Frank G. North, Inc.; B. W. Whorton, superintendent, Dixie Cotton Mills Company, LaGrange, Ga.; and B. E. Willingham, overseer of weaving, Lanett Mill Division, West Point Mfg. Company, Lanett, Ala. . . . . . .

Looms Changed to War Fabrics; Other WPB Textile Directives

THE TEXTILE INDUSTRY in April felt further drastic direct effects of the war program and government control on three fronts. One was the action of WPB, under its program of converting industry to war production, in directing the cotton-textile industry to convert a substantial part of its capacity from civilian to military production. Another was the restriction placed on production of critical machinery, which included textile equipment of all kinds. The third was the establishment, by OPA, of price ceilings on practically all types of cotton goods not previously covered by schedules.

Loom Conversion Ordered

The WPB Limitation Order L-99 directed the cotton mills to convert specified percentages of looms producing a long list of cotton fabrics commonly used in clothing and the home to the production of bag osnaburg and bag sheetings. The order was issued on April 20, and requires the conversion to bag osnaburg, within from 30 to 60 days of the date of the order, of 20 per cent of the looms which on February 28 were operating on the following goods: bed ticking, cottonades and suiting coverts, colored yarn suitings (other than cottonades, suiting coverts and whipcords), denims, pin stripes, pin checks, hickory stripes, etc., drapery, upholstery and tapestry fabrics, turkish and terry woven towels and toweling, huck, damask, and Jacquard woven towels and toweling—and 100 per cent of all looms operating on osnaburg of any construction; that is, all looms producing any kind of osnaburg must now produce the bag osnaburgs specified in the order.

Order L-99 further directs the conversion, to bag sheetings, of 40 per cent of all looms operating, on February 28, on outing flannels, other napped fabrics except canton flannels, work shirt flannels and blankets, and soft-filled sheetings, 50 per cent of all looms operating on Class C sheetings, and 100 per cent of all looms operating on Class A and B sheetings.

The percentages were calculated for looms which on February 28, 1942, were operating on the fabrics listed for conversion. The percentages apply to all the looms regardless of the fact that some of them may have been engaged on February 28 in the production of preference-rated civilian or military fabrics. The conversion program is designed to increase the present rate of annual production of osnaburg from 263,500,000 yards to 660,000,000 yards, and the bag sheetings production from 488,000,000 yards to 855,500,000 yards. These fabrics are needed in the war program for sand bags, camouflage cloth, and food and agricultural bags. Loss of much of the burlap supply from India, coupled with ever-increasing military needs, has created a shortage of these materials.

In explaining the order, Frank L. Walton, deputy chief of the textile, clothing and leather branch of WPB, said WPB will issue additional orders soon dealing with essential civilian fabrics, and mills required under these forthcoming orders to manufacture specified essential civilian fabrics will be regarded by WPB as having converted to war production.

Machinery Sale Control

Mr. Walton said a recently-completed WPB survey of the entire cotton-textile industry showed that as of February 28, 1942, 74 per cent of the mills (601 out of a total of 815) had defense orders. The survey further showed that 34.3 per cent of the total production of the weaving mills was on defense orders, as was 40.1 per cent of the total production of the yarn mills. An additional 3 per cent is accounted for by defense orders placed between February 28 and April 21. Order L-99 converts an additional 12.9 per cent of the weaving capacity to defense orders, bringing the figure up to 50.27 per cent. Orders are being prepared to assure military and essential civilian supplies which will require 38.1 per cent of the total output of the weaving mills, which added to the 50.27 per cent brings the defense percentage up to 88.37 per cent. The plan worked out calls for increasing the production of cotton fabrics from the 9,045,000,000 square yards produced in 1939 to 14,000,000,000 in 1942 and 15,000,000,000 in 1943. The plan contemplates fabrics with minimum picks and made, whenever possible, full width of the looms, to secure more square yards. It is now planned, Mr. Walton said, "to expand production schedules to secure a larger yardage—in cooperation with the industry committee and several technical committees to be set up for this purpose in each section of the industry.

WPB Limitation Order L-83, affecting production of critical industrial machinery, covers textile manufacturing and finishing machinery of all kinds. It was originally made effective April 9, and the restrictions were subsequently removed until May 15. It prohibits the acceptance of orders for the equipment covered, and the delivery of such equipment, without WPB approval, after May 15. Approved orders are those from government procurement agencies and for use on war contracts.

Price Ceilings Extended

On April 23, OPA announced the application of price ceilings to all carded gray and finished cotton goods not previously covered by schedules. This order was made effective as of May 4. A base pricing period from July 21, 1941 to August 15, 1941 was established. A "weighted average price" in effect during the base period, to be adjusted by the "escalator" provision allowing for changes in the price of spot cotton, will be the basis of the ceilings.

Exceptions to the order include products subject to other maximum price regulation; products consisting to the extent of 50 per cent or more by weight, after weaving and before finishing or fabrication, of combed cotton yarn; or products in which either the warp or the filling consists wholly of combed cotton yarn; garments; colored-yarn or finished fabrics predominantly used for upholstery or draperies; gauze bandage, adhesive tape, and related medical supplies; fabric less than 6 inches in width after weaving and before any finishing or fabrication; woven tickings heavier than 4.95 yards per pound and not in weaves requiring a Jacquard loom; and tire fabrics.

Other than these exemptions, the entire production of the industry not previously controlled is included in the order.

U. S. Rubber Company to Sell Rayon in South America

United States Rubber Company, Rockefeller Center, New York City, has added a department to handle sales of rayon in the Central and South American markets, it has been announced by L. C. Boos, head of the company's export division. The move took place because of the simultaneous curtailment in the export of manufactured rubber goods and the need for an already established organization in Latin America to handle distribution of rayon already allocated there. John D. Clarke, as director of sales for U. S. Rubber Export Co., Ltd., will direct activities with August W. Kops as rayon sales manager.

CURRENT TEXTILE TOPICS

War's Insatiable Appetite Realized

WHEN IT WAS indicated early in the year that cotton-textile production for 1942 was likely to reach approximately 12,500,000,000 square yards, one would have thought that would suffice for any thinkable demands. In spite of such astounding rate, the past month found government officials dissatisfied over the production available for furthering war activities.

When the government called for bids on 351,300,000 yards of cotton fabrics on March 31 and the response was far short of this amount, it was realized not only that an insatiable demand existed but that heroic measures would be necessary to cope with the situation. Here was an order of historic significance by itself, precipitated upon an already congested manufacturing program. This procurement program has few precedents.

This situation put a new burden upon government and the industry. The problems of government agencies were manifold, embracing various phases of control from raw cotton and goods production to efforts against inflation. Those of the cotton manufacturing industry were to speed production and co-operate so far as possible with the government for all-out war effort.

Over-All Program Besets Washington

Requests of the government for tremendous amounts of goods offered manufacturers both prolonged activity and the highest prices for a great many years. On the other hand the government was concerned with efforts to avert the tremendous excess costs of the previous World War through inflation and at the same time to insure the vast production schedules essential to the successful prosecution of the present war.

It was estimated authoritatively that an excess purchasing power of 12 to 15 billion dollars will result from a national income of $110,000,000,000 in 1942. The office of OPA around the middle of April reported that "we are in the early stages of a serious inflationary spiral" which can be stopped "only one way: an effective, wide-scale government program to stabilize prices."

Concurrently, the information from Washington indicated that broad changes in the program for cotton goods were under consideration. a comprehensive plan for control of prices from the cotton grower through to the ultimate consumer was being studied. In this situation, however, a variety of complicated circumstances were faced and some of these were the consequence of previous government regulation.

Factors in price to be reconciled

From the outset of the National Defense program in June of 1940, the cotton manufacturing industry has exhibited to the utmost a spirit of co-operation with government. Thus it opposed strongly the suggestions that the government should requisition looms for the production of military and defense goods. The industry was not directly responsible for conditions that brought dissatisfaction this spring and it was felt that drastic interference through such measures as requisitioning would hamper co-operation rather than improve deliveries of goods.

Dissatisfaction derived from difficulties with the large orders for duck and the lack of bids for the 351,000,000 yards of cloth on March 31. The duck situation long ago was improving without drastic regulation, however, and undersubscription of the big March order was ascribed in the trade to the control policies on raw cotton.

For the first time in many years, the government this spring asked for increased cotton production. The market had become very bullish, meantime, and the price of raw cotton under the basis of regulation for goods by the cost of raw material was the crux of the stabilization effort, along with the wage levels. The movement of available cotton is another crucial element in the all-out effort.

Instead of loom requisitioning, the trade suggested a way to facilitate further the co-operation of the industry through drastic changes in the government set-up, notably establishment of an authority with power to require delivery of raw cotton in quantities needed, whether held by Federal agency, merchant or farmer. With cotton assured, it was the opinion that mills would be able to offer and provide full deliveries requested.

New Significance for Cotton Week

Writing of these comments is necessarily done well in advance of publication and drastic changes may already have transpired through government effort at reconciliation of the various divergent elements. It was apparent, withal, that revolutionary developments were to come and the supply of goods for non-essential civilian uses would be severely curtailed.

Thus Dr. Claudius T. Murchison, president of The Cotton-Textile Institute, predicted that the WPB would issue a drastic conversion program for the textile industry before the end of April. At the same time he suggested that the supply of cotton goods for non-essential uses might be reduced as much as 60 per cent of the normal flow through wholesale trade channels.

Under such circumstances, Dr. Murchison emphasized that demands will require constant operation for the industry throughout the emergency period of the war and for a considerable period thereafter. And this gave a new significance to National Cotton Week, from May 15 to 23.

Fundamentally a week for promotion of cotton goods consumption, the program this year was one for stressing durability of such textiles and for conservation of national resources therein. As we have stated since the National Defense Program started, the cotton industry has been under a double duty: the military and civilian. That has been accentuated by the promoters of National Cotton Week, with an eye to a sound adjustment when the war emergency gives way to a peacetime program.

• New sport shirt in Teca Point, a pin-checked worsted-type woven with Eastman crimped acetate rayon for extra resistance to crushing and wrinkling. Fabric from L. & E. Stirn. Photo, courtesy Tennessee Eastman Corporation . . . . . .

New England Mill Situation

MANUFACTURERS of cotton goods in the New England district have had a complicated situation through the second quarter of the year, as a result of government demands and labor conditions. The adjustment to extraordinary calls for fine combed fabrics for military needs has been irksome to buyers for civilian needs waiting for an opportunity to cover requirements. Interruptions from strikes have been an aggravation to mills trying for utmost productive effort.

One of the biggest obstacles to bidders on the 351,300,000 yards of cotton fabrics asked on March 31, it was said in the textile market, was the request for combed goods. This involved upward of 100,000,000 yards of overcoat lining, uniform twill, wind-resistant cloth and other items.

Civilian trade buyers checking the situation just before such orders were announced already found mills offering practically nothing. It was said that they were finding it tiresome to learn that their regular sources could not accommodate them.

Soon after the tremendous government schedule was announced, a number of mills were reported as planning 100 per cent production on war business. Hence, in this district of specialized production for the most part, the outlook for civilian trade was dark.

Lose production through strikes

Aggravating this situation was the serious interference with production through strikes, especially in the Fall River district. The announcement from Washington on April 5 of 40 cents an hour as the minimum for wages in textiles did not occasion more than a passing comment to the effect that such a scale was equalled or bettered in New England as a rule. But other labor matters were of vital consequence.

On the general front, there was the dispute over a demand from the Textile Workers Union for a wage increase of 10 cents an hour. After about a month of fruitless negotiation this matter was referred by the Department of Labor in Washington to the War Labor Board. At last accounts, the matter was awaiting solution.

More vital to the war program were strikes which stopped work; more than 18,000 workers, it was estimated, were out of work for practically a fortnight in Fall River on a matter of union bargaining rights. Meantime, the mills were holding orders for millions of yards of Army goods.

In New Bedford, about 150 weavers on automatic looms in the Hathaway Mill, these machines also engaged on government contracts, went on strike in protest against time studies. Other workers were affected, the stoppage lasting about a week, when the matter was referred to arbitration.

Massachusetts mills run 94 hours a week

Cotton mills of Massachusetts came into the second quarter of the year with operations at about 94 hours a week, aceording to the State Department of Labor and Industries. While this indicated considerable overtime above two regular shifts of 40 hours a week and some mills were running three shifts, in other New England states of less restrictive legislation the activity was indicated to be greater.

This latter was reflected in gains of payrolls. The department reported the average weekly pay in cotton mills of the State at $24.22, an increase of 33 per cent over the $18.21 a year previous. Nashua Manufacturing Co., of Nashua, N. H., was reported to show an increase of more than 50 per cent in the average over the same period. In one extreme case for New England, with a plant on seven days a week, the gain was 86 per cent.

Consumption of cotton in New England during the first quarter of 1942 amounted to 336,536 bales, according to the Census Bureau. This was a little more than 12 per cent above the 298,958 bales for the same quarter of 1941. Last year also was a period of high activity, however, with a gain of more than 25 per cent on the first three months of 1940.

For the first two months, 1942 had a gain of 13.1 per cent on 1941 for New England. This relative gain, however, dropped to less than 11.5 per cent in March. The Massachusetts gain in March over a year ago was less than 11 per cent. In February it had been close to 12 per cent, which reflects the influence of strikes in the final part of March. As the Bay State represents more than half the cotton mill industry of New England, it is apparent that the drop is significant.

Among the effects of war in this district, incidentally is the discontinuance by Pepperell Manufacturing Company of its combed percale sheet business "for the duration". This is laid to the scarcity of $1\frac{3}{16}$ inches staple cotton and the government need for it in quantity.

Another incident is the recently reported intention of the Arnold Print works to liquidate its printing business. It was stated that the preferred stockholders would receive $31.50 a share on April 30.

"THE SITUATION" as Seen Across an Executive's Desk

April 17, 1942

War

"We can take it, if we are good enough," says Elmer Davis. This statement means that in our present reverses and disasters, we must not lose faith. The speed of men and machines is rapidly growing into a position of offense. The day will soon come when America's men and money and machines and morale will change the course of present events in such a way that all can know and realize it. This condition is already evident but only to students who can and will study deeply the moving parade.

America will not lose faith nor falter. The spirit of '76 still lives and freedom is just as precious today and just as much desired as it was in those days. Our nation has no imperialistic desires. It is motivated most actively and conscientiously in saving and preserving the Four Freedoms. We cannot fail in such a fight. There shall be no permanent night enshrouding the souls of men.

The Inflation Problem

The problems of inflation are growing more serious with the economic changes made necessary by the war production program. The cost of living, wages, profits, supplies available, taxes and other factors lift their heads menacingly in the picture. Until these factors are better correlated there can be nothing but increasing confusion.

The Research Institute of America in one of its letters says there are three basic interrelated approaches:

1. A quick freezing of retail prices fixing the cost of living and removing the justification for higher wage demands.

2. A cash wage freezing which would quickly involve rigid profit limitations.

3. A rapid expansion of rationing and a soaking up of excess purchasing power by forced savings.

In thinking of these factors, there is the influence of the payment of increased income taxes as of March 15, manifesting itself in the field of profits,

New Callaway Auditorium in LaGrange, Ga.

● This is an exterior view of the new Callaway Auditorium, in LaGrange, Ga., which was dedicated in the memory of Fuller E. Callaway, Sr., founder of the Callaway Mills, with appropriate exercises, on Tuesday evening, April 28. Containing an auditorium seating more than 2,000 persons and equipped with full, modern stage, basketball court, etc., the building will be utilized for staging outstanding entertainment and education, as well as for local community activities. It was erected by the Textile Benefit Association, of LaGrange, and will be operated by the Textile Welfare Association. R. E. McTigue is executive director.

in the cost of living and in the wages of labor. The consumer group is also complaining. Each group is blaming the other and while the battle of blame rages, inflation creeps steadily upward. Some sane plan of control must stop the vicious cycle.

The Tax Problem

The new tax bill is still being discussed and takes on new forms and new angles as the conflicting economic problems unfold. The question of a sales tax is now being given serious consideration along with the question as to whether or not a specific limit should be placed on war profits. Already the house has appended to the latest Army appropriation bill a 6 per cent limit on profits from War and Navy Department and Maritime Commission contracts. The tax bill is seriously involved in the problem of inflation, profits and the cost of living, as well as its major function of securing sufficient revenues to carry on the current expenses of government and providing its part of the funds for carrying on the War.

Labor

The provisions of the wage-and-hour law, together with certain clauses in the contracts of organized labor, have come militantly into the forefront, first as an economic problem and finally as a political and economic problem. Thus its influence in the inflation picture. The question of the length of the work week before overtime begins is quite a question and enlarges itself when it takes on the amount of increase of wages when overtime begins.

Much heat and controversy have been generated over this problem which now has reached such a state that it seems that both labor and business will lose by it. What labor yields, as a compromise, will be offset with a penalty on capital.

Cotton

February cotton consumption by American mills totaled 893,745 bales as compared with 945,909 bales in January and 793,428 bales in February 1941. February consumption of cotton included 4,500 bales distributed by the Surplus Marketing Administration through various cotton mattress programs. Domestic cotton consumption for the first seven months of the current season ending February 28 totaled 6,280,108 bales as compared with 5,216,974 bales in the same period last year, an increase of 20 per cent.

The $\frac{15}{16}$-inch Middling grade cotton price in March at ten designated markets averaged 19.6 cents per pound as compared with 19.2 cents per pound in February.

Because of tremendous war and civilian demands for cotton, the Department of Agriculture recently called on the nation's cotton farmers to plant their full national acreage allotment of about 27,400,000 acres of cotton in 1942. It will be recalled that the 1941 cotton crop of 10,976,000 bales was produced from a planted acreage of 23,250,000 acres, although the national acreage allotment in 1941 was also 27,400,000 acres.

In recommending the full planting of the nation's acreage allotment, it was also advised that as much of the allotment as possible be planted in varieties to meet future military requirements.

Income in 1941

According to a statement made by the National Industrial Conference Board, the net income, after taxes, in 1941, of a group of 21 textile companies gained 33 per cent when compared with 1940, and 38 per cent when compared with 1939. A good illustration of the trend in the distribution of earnings is indicated by the relation of Federal income taxes, dividends and earned surplus to net income before taxes. These ratios stood respectively at 56 per cent, 29 per cent and 15 per cent in 1941. In decided contrast, these same ratios were respectively 18 per cent, 38 per cent and 44 per cent in 1939. Therefore, in 1939, some 82 per cent of earnings was distributed as dividends and earned surplus, whereas, in 1941, only 44 per cent was thus appropriated.

Stocks of Wool

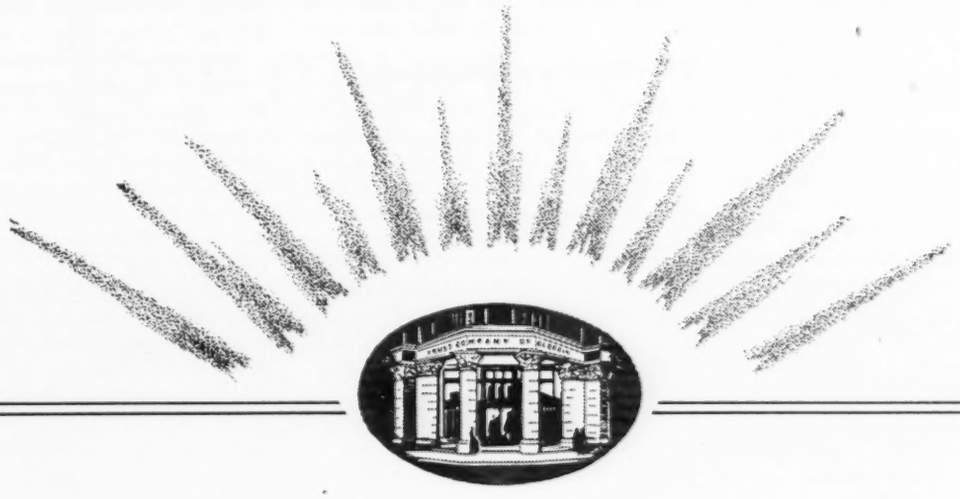
Stocks of apparel wool at the beginning of this year indicated a 4.4-months' supply, while carpet wool on hand was sufficient to last 4.2 months. Inventories of carpet class wool, scoured basis, declined 13.1 per cent at the year-end compared with the previous quarter. Actual figures showed a total of 46,945,000 pounds, against 54,044,000 pounds on September 27, 1941, and 39,968,000 pounds on December 31, 1940. Woolen and worsted spindle operations continue at a higher level than a year ago. The Pacific war is likely to influence activities later in the year.

Social Legislation

There are two or three bills floating around in the committees of Congress that no one seems to be considering seriously. Persistence of the right kind is a valuable sales asset. The proponents of these measures are persistent and insistent. Two of these bills were introduced on February 19th, by Congressman Rabant of Michigan. These are known as H. R. 6639 and H. R. 6640, "To provide temporary relief to labor becoming despoiled by reason of the emergency created by the war."

The third bill known as S. 2414, "Civilian War Benefit or Relief Act of 1942," was introduced by Senator Pepper. These deal with social security which means increased social security taxes along with increased appropriations.

They argue that social security taxes



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can be increased to prevent inflation, to help finance the war, to provide more liberal benefits to those already under its provisions, and finally that the new Federal security programs should be enacted to set up systems of compensations for sickness disability and provide medical and hospital insurance.

These measures are only a part of the plan to completely federalize all social security measures and make the national capitol the great Santa Claus of the unfortunate and the indigents and further pauperize the nation. Some one should watch the progress of these measures.

Textile Wages

The average hourly wage rate for workers in the southern textile industry, as compiled by the Bureau of Labor Statistics, U. S. Department of Labor, was 48.4 cents per hour for January, 1942. This is the latest rate obtainable. This rate will be slightly increased from its present position on and after April 20, when the minimum wage rate of 40 cents per hour becomes effective.

From the same source it was learned that the cost of living in the nation increased 9.6 per cent in the year 1941. During that same period, hourly textile wages in the South increased 19.9 per cent and weekly wages increased 30.2 per cent. These figures are worth remembering.

The Patriotic Industry

As the passing days become more stringent and difficult, it is a source of pride to study the policies of the southern textile industry in its co-operative efforts with the government.

The needs for materials for the war program are taxing some of the units of the industry. In their efforts to comply, they have suffered many hardships and had to make many shifts in their production schedules. They have done this with as little complaint as anyone could. They have done everything possible to meet civilian demands. They have studied the welfare of their workers and been as kind and considerate in all of their policies as they have been able. In fact, they have done their dead level best under the trying conditions.

The workers in the South are loyal in their work in trying to do their part. They have furnished their quota in the armed forces. Only this week we read a list of 700 names of valiant sons that had left only one organization to fight for their country. The workers have bought enormous sums of war bonds. They have given their time and money to all of the co-operative efforts of civilian defense. This list is by no means all of the evidence that could be introduced but it is enough to show that the southern industry is patriotic in word and deed.

The Hosiery Situation

During the period of evolution in the manufacture of full-fashioned hosiery from silk and nylon to rayon with a limited amount of cotton, the hosiery branch of the industry has been devoting its energies and ingenuity to the development of styles and constructions which will be pleasing to the eye and serviceable to the consumer. The rayon producers are supplying finer deniers in larger quantities, and chemical discoveries have been such that these finer deniers will now retain a high twist, which will make rayon hosiery stronger, more sheer, more elastic and better appearing because of the dull effect which results. The consuming public will not, therefore, be too greatly disturbed over the change from silk and nylon to rayon hosiery.

The demand for children's hose and half-hose continues strong, but there is some uncertainty as to whether such demand is due entirely to consumer purchases or if most of it is occasioned by the building of stocks by jobbers and retailers. Now that the use of rubber is definitely prohibited, it will be necessary for many of the half-hose and children's hose manufacturers to convert their equipment for the making of full length half-hose and extended cuffs on children's. This will create a problem because of the difficulty to obtain the additional quantities of yarn which will be necessary for the manufacture of longer hose of both types.

What the Textile Mills Are Doing

Warrior Mills is being established at Spartanburg, S. C., to manufacture duck from purchased yarn. It will have between 100 and 125 looms, and will be associated with the Fairforest Finishing Company. Directors include Arthur and W. P. Ligon of Spartanburg, and John M. Reeves, Richard E. Reeves and A. M. Kerr of New York City.

S. Liebovitz & Sons, Inc., of New York, new owners of the former No. 2 plant of Exposition Cotton Mills Company at LaFayette, Ga., have changed the name of the plant to Linwood Cotton Mills, and it will continue to manufacture broadcloth. T. C. Giles remains as superintendent.

Cluett, Peabody & Company have purchased the Grosvenor mills of the Grosvenor Dale Company, North Grosvenordale, Conn. It contains 100,000 spindles and 2,500 looms, and will continue the manufacture of fine combed cotton shirting materials for Cluett, Peabody & Company.

Samarkand Rugs, Inc., 300 Fifth Ave., New York City, manufacturers of cotton rugs, with plant at Rock Hill, S. C., have purchased 18 Draper looms for installation at Rock Hill to be devoted largely to the production of duck, osnaburgs and other materials for government service.

The engraving department of the Rock Hill Printing & Finishing Company, Rock Hill, S. C., has been closed for the duration of the war, due to the shortage of copper for engraving. The company's engravings will be secured from outside engravers.

Arnold Print Works, Inc., North Adams, Mass., is arranging for early dissolution of the company, and various properties of the company will be sold. It is understood the Renfrew division of the company will continue operations as heretofore.

Carroll Silk Hosiery Mills, Inc., Hillsville, Va., have been acquired by new interests headed by Jack Kahn of New York City. Mr. Kahn is president of the new organization and L. E. Frye, formerly superintendent, is vice-president.

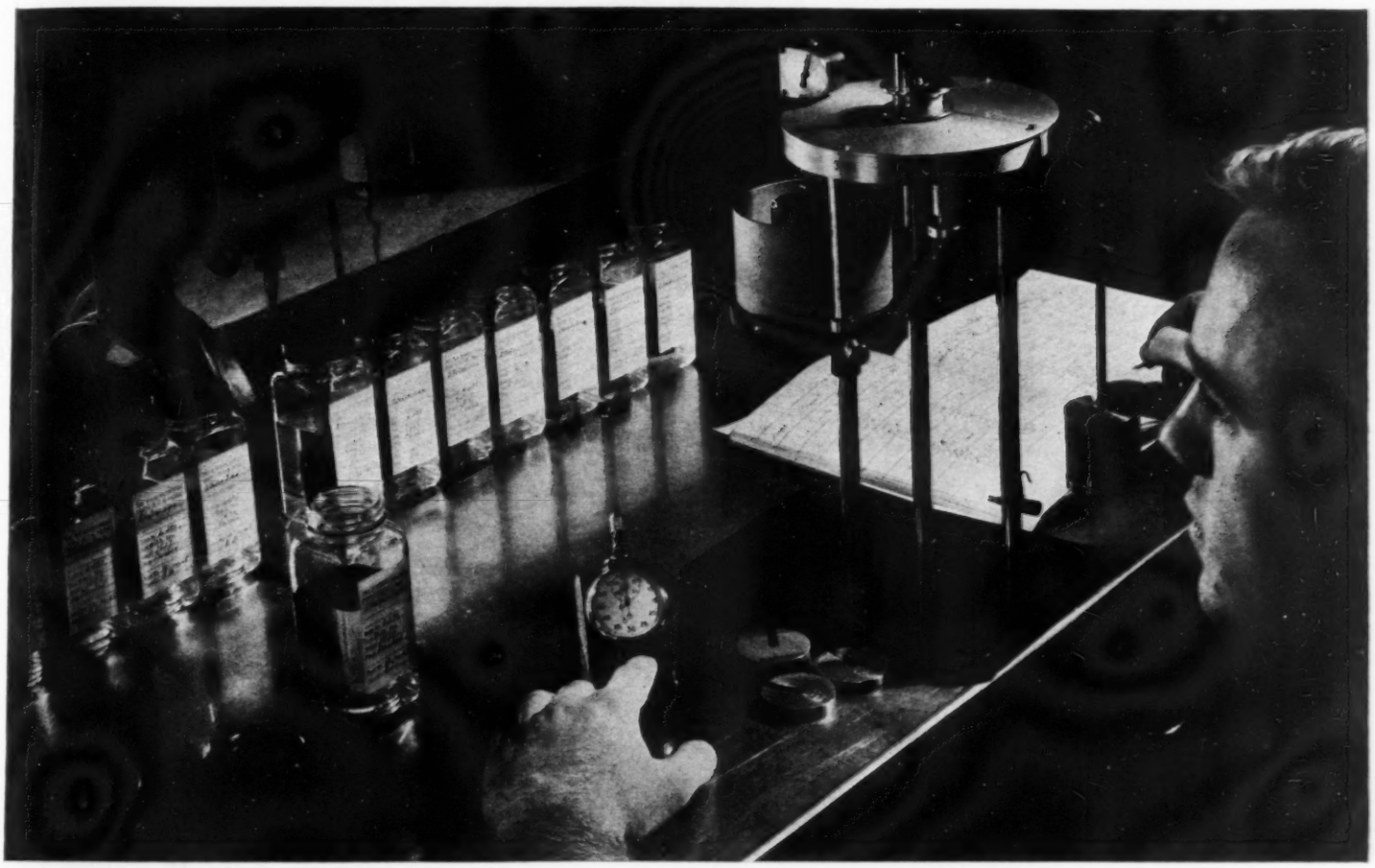
Highland Mills, Griffin, Ga., have awarded contract for a one-story addition to cost, with equipment, approximately $25,000. Robert & Co., Inc., Atlanta, Ga., are the architects and engineers.

Victory Textiles, Inc., Greer, S. C., recently organized, is planning a new mill for the production of cotton yarns, rayon specialties, etc. R. C. McCall is president and treasurer; J. W. Norwood, Jr., is vice-president.

Work has been completed on an addition to Bonita Ribbon Mills, Brewton, Ala., where new looms and other equipment will double the capacity of the plant.

Joseph C. O'Connell Co., manufacturers of wool tops for cotton mills, has moved from New Bedford to Taunton, Mass., and will shortly double production.

How many centipoises?



THE VISCOSIMETER. The Viscosimeter is used to determine the viscosity of sizes, gums, thickeners, and printing pastes. The viscosity of the liquid in question is measured by the rate of spinning of a hollow cylinder immersed in the liquid. The cylinder is spun on its own axis by means of a hanging weight and a system of pulleys. The faster the cylinder spins under a given load, the less the viscosity of the liquid. Relative viscosity is measured by the number of seconds required for the cylinder to make one hundred revolutions under a certain load.

YOU DON'T TAKE CHANCES!

To guard against unseen errors, to ease the transition from laboratory to plant, the Textile Division of the Rohm & Haas Company has established three textile laboratories, each one with its own indispensable function:

The Research Laboratory, for basic research in the chemistry and physics of textile products and processes; the Evaluation Laboratory, where the findings of the Research Laboratory are tested and evaluated; and the Sales Service Laboratory, where customer problems are handled and the findings of the Research and Evaluation Laboratories are subjected to conditions simulating as nearly as possible actual mill conditions.

TRITONS–*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

RHOTEXES–*Synthetic gums for sizing and thickening.*

DEGOMMAS–*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES–*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES–*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN–*Stripping agent for wool stock and piece goods.*

FORMOPON–*Reducing and stripping agent in acid systems.*

LYKOPON–*Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes.. Enzymes.. Crystal-Clear Acrylic Plastics.. Synthetic Insecticides.. Fungicides.. and other Industrial Chemicals

The Cotton Waste Market

Boston, April 14, 1942

COTTON WASTE seems about the only waste material in the United States not exhibiting a rising tendency. Dealers here state that prices are all right and have little or nothing to do with the prevailing dull situation. Some business is being done all the time and in all the wastes, but the aggregate turnover looks very puny against the accumulated material which is increasing all the time.

Traders are having a hard time in keeping prices from slipping to some lower level but there is a general reluctance to actually reduce prices. Continued contraction of the outlets for wastes is probably the most dominant factor in the market at this time. It might be thought that with the supply of waste so far out of a line with consumption that some sharp decline in prices might occur. Dealers do not see it this way, knowing as they do that even a sharp cut in prices would have no influence whatsoever in bringing about any heavier demand at this time.

Holders of strips are confident of their position and are looking for some substantial buying in the near future for use in osnaburgs and similar coarse fabrics. During the time that cotton has been advancing steadily the prices on strips, peeler upland and vacuum, have been practically without change. The spread now seen between spot cotton and these valuable substitutes for the virgin staple is wide enough to bring about some good sized orders in the not distant future.

However, there is nothing in the immediate situation to create much optimism for any material change for the market during this period of growing disturbance and dislocation in industrial life incidental to the putting of the entire country on a war production basis. The amount of cotton used last year was at the peak of the American industry for all time. Many waste dealers have little idea of the magnitude of their market. The amount of waste coming out of the cotton industry last year is estimated conservatively at 750,000,000 pounds and in addition about 200,000,000 pounds of comber. While the cotton industry is reaching new peaks, the consuming waste industries are moving the other way without exception.

Peeler comber has moved out of the doldrums and on Army awards of 6,900,000 comforters has risen to the highest price for several weeks at 65-67½ per cent of New York spot cotton at 21.20 cents. Sak comber responded sympathetically by a rise of 2½ per cent to 60-62½ per cent. Sak and Egyptian comber is stronger, now that this foreign cotton has been prohibited from use except on war orders and in the manufacture of sewing threads. Meanwhile the Egyptian Government has taken steps to increase its cotton production owing to the need of a larger use of land for food production.

At a convention of the National Cotton Waste Association held in Atlantic City, the matter of waste accumulation was fully discussed and it was argued that the Government should do something to open up a new outlet for such materials as picker, fly and strips by specifying their use in the construction of mattresses. The proposition had previously been turned down, but the convention was led to believe that the Government might now give favorable consideration seeing that the shutdown of the automobile industry had destroyed the largest single outlet for these low-priced wastes. Mattresses for Government use have now a filling of linters and cotton and it was pointed out that in explosives and rayons there was a much more vital use than in stuffing mattresses.

New Textile Publications

Allis-Chalmers Mfg. Co., Milwaukee, Wis. Bulletin B6082-A, describing Vari-Pitch Texrope sheaves, stationary and motion-control, with operating diagrams, sizes and dimensions, for increasing machine flexibility and output with quick, accurate speed-changing.

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J. Technical Bulletin No. 648, "The Priorities System as Related to the Chemical Industry", summarizing the various controls established by WPB.

Steel Heddle Mfg. Co., Philadelphia, Pa. Broadside and wall hanger showing most of the textiles being used for war purposes, and heddles for their weaving, as well as frames, selvage harness, reeds, combs, shuttles and accessories.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa. 7-page leaflet describing sequence and weld timers—automatic control for resistance welders.

U. S. Testing Co., Inc., Hoboken, N. J. Booklet, "Testing in Modern Industry", featuring conversion tables and specification standards for textiles, chemicals, metals, and other materials. Revision of earlier editions.

Dennison Mfg. Co., Framingham, Mass. Folder on "Paper Products for War Contracts" describing many paper products available for helping to fill war contracts.

Link-Belt Speeder Corp., 301 W. Pershing Road, Chicago, Ill. Book No. 1928 on Model HC-70 truck-mounted crane, which may be used with hook block, clamshell bucket, or a dragline bucket.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa. Leaflet 10-700 describing manual auto-starters for low voltage starting of non-reversing, squirrel-cage, 2- and 3-phase, 5- to 200-hp induction motors.

Bulletin B-2281-A, describing portable, trailer-mounted substations for central station emergencies.

Bulletin B-3013 covering portable switchboard and miniature panel instruments for industrial, central station, laboratory and general use.

Bulletin B-3044, a 32-page booklet describing motor drives, gearing and control for industrial and commercial air conditioning systems.

International Nickel Co., Inc., 67 Wall St., New York City. Current issue of "Inco" dealing with such problems as the salvage of scrap, sub contracts, and the conservation of supplies.

Swartwout Company, 18511 Euclid Ave., Cleveland, Ohio. Bulletin No. 214, 24 pages, illustrating and describing the Swartwout line of roof ventilators for industrial and commercial buildings; and Bulletin No. 215, 16 pages, a manual including a guide for estimating building ventilation and roof ventilator requirements, etc.

Allis-Chalmers Mfg. Co., Milwaukee, Wis. Bulletin B6018B, 36 pages, giving complete engineering data on Allis-Chalmers SS Unit pumps and the Electrifugal.

Allis-Chalmers Victory Book Illustrates Industry at War

"We Work for Victory and We Plan for Peace", a dramatically illustrated brochure designed to show what products Allis-Chalmers is making under war-time conditions and where and how these products are helping to produce more guns, tanks, planes and ships, is now being distributed by this company.

Nearly every phase of the nation's industrial production is represented in the new book, since Allis-Chalmers produces a greater variety of capital goods than any other company in the world. These products, now vital in war production are, for the most part, the same Allis-Chalmers has always made.

They include power-making equipment, such as hydraulic and steam turbines; power-distributing equipment, like transformers, rectifiers, switchgear and regulators; and power-using machines, such as motors, drives and pumps. In addition, the company's products are essential in mining and processing of metals of all kinds, in cement making, road building, farming, food processing, the oil industry and scores of other industries whose production is the basis of America's war production.

Scores of war items new to Allis-Chalmers production complete this company's contribution to the war effort, as colorfully described and illustrated in the new book.

The book is being distributed in conjunction with the showing of a sound moving picture with the same title and the same general theme. In news-reel style the movie brings to life many of the views shown in the book.

Dyestuff Advisory Committee

The complete membership of the dyestuff manufacturers industry advisory committee appointed by the Bureau of Industry Advisory Committees of the War Production Board follows:

A. R. Chantler, E. I. du Pont de Nemours & Co., Wilmington, Del.; E. K. Hallbach, General Dyestuff Corp., New York City; S. C. Moody, American Cyanamid Co., Bound Brook, N. J.; H. B. Marshall, Ciba Co., Inc., New York City; Jack Crist, Southern Dyestuff Corp., Charlotte, N. C.; Thomas H. Roberts, Arnold, Hoffman & Co., Providence, R. I.; C. M. Richter, Pharma Chemical Corp., New York City; and E. M. Maxwell, director of domestic sales, National Aniline Division, Allied Chemical & Dye Corp., New York City.

Dr. Arnold L. Lippert, of the textiles, clothing and leather goods branch of WPB, is the government presiding officer.

Get mad . . . get tough . . . break records . . . Deliver!

Two million additional men before the snow flies . . .

A total of nearly four million men before winter depending on *you* for clothing and equipment . . .

The United States Army invests $90.35 in clothing for the average enlisted man upon his induction. Maintenance cost of clothing may run almost as high every year.

It's a big job . . . and it's getting bigger every day.

The mechanical equipment of the Textile Industry has been and must continue under terrific strain. We must work harder, produce faster.

Thus, shall our armed forces have all the clothing and equipment they need without serious curtailment of essential textiles for civilians, a safeguard against inflation.

Mill engineers and superintendents are seizing every opportunity to repair or replace obsolete equipment. Since 1820, the Butterworth Organization has served the Textile Industry . . . pioneering, building and improving machinery for the Wet End of Textile Finishing.

Today, while the making of gun mounts has first call on our facilities, we are still ready to do everything we can to keep your equipment at top-notch efficiency.

H. W. BUTTERWORTH & SONS CO.
Main Office and Works, Philadelphia, Penna.
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

COMMENT on the COTTON MARKET

New Orleans, April 16, 1942

AFTER HAVING been inactive for six weeks, the cotton market was galvanized into activity in the last week of March and advanced about $6.50 a bale before the buying movement let up. New high records were made for all months on this advance with July selling up to 19.99 in New Orleans and to 19.95 in New York, while all new crop months in both markets went above the 20-cent level for the first time since 1929. Spots also made a new high with the average for Middling 1 1/16-inch rising to 20.47.

A reaction of about 50 points occurred after the above levels were made due to a heavy profit-taking and hedging movement. The market steadied again around the middle of April but up to the writing of this has not recovered much of the lost ground.

The advance to new high ground was made as a result of buying of futures by trade interests either to fix prices on goods sold or to assure themselves an adequate supply of raw cotton during the Summer and early Fall because spot firms were refusing to sell ahead in large amounts, as is usual at this time of the year, owing to uncertainty over governmental action before the time of delivery. Other helpful influences were belief that the administration would not again attempt to depress prices of agricultural products owing to the demonstrated power of the Farm Bloc and intimation from a high official of the Department of Agriculture that no ceiling would be placed on cotton under prices fixed by Congress and a bullish statement from the head of The Cotton-Textile Institute.

A private firm claimed to have been advised by an official of the Department of Agriculture that no ceiling would be placed on cotton under 21.47 cents a pound on the farm for the average run of cotton. This is the ceiling provided for in the price control bill. This official also expressed the personal opinion that this price would represent about 23 cents landed at Carolina mill points and 22.25 for futures.

C. T. Murchison, president of The Cotton-Textile Institute, in an address to a spinners' convention at Charlotte, N. C., said that the entire textile industry must soon devote itself to the war effort and that many more looms must be brought into producing war supplies. He is quoted as saying, "I am getting worried over the cotton supply". He predicted domestic consumption this season of 11,500,000 bales and said, "We will come to August 1 with a 10,000,000-bale carry-over of which 4,000,000 bales will be extremely low grade. There will be only a normal carry-over of good cotton and the burdensome surplus which we had several years ago will have completely disappeared." He was also quoted as saying, "I am worried over this year's crop. There will be a shortage of fertilizers, insecticides and farm labor. The crop possibly will be actually under domestic consumption. In 1943 we will be facing a very real shortage of cotton". Well-regarded trade authorities are predicting domestic demand next season of between 13,000,000 and 13,500,000 bales. Exports are estimated around 1,000,000 bales.

The reaction which followed the high levels reached early in April was brought on by profit-taking and hedge sales induced by rumors that the CCC would call loans on the 1941 crop in order to increase the supply of desirable cotton, anti-inflation talk from the President and other high government officials and unfavorable war developments. The appointment of Oscar Johnston as special agent of the CCC was at first accepted as confirming rumors that the 1941 loans would be called and the cotton put into a pool to be sold to mills. It induced much liquidation. This idea was dispelled later by a statement from the Department of Agriculture to the effect that the chief duties of Mr. Johnston will be to handle any Brazilian or Peruvian cotton which our government may buy to aid those countries. Any cotton which we may buy from those countries will be stored in South America, it was also stated.

About half the loss was recovered after Washington press dispatches furnished what was accepted as an outline of the President's expected anti-inflation bills. This outline indicated clearly that no attempt would be made to put ceilings on agricultural products under values set forth in the price control bill recently passed by Congress.

The cotton parity was raised in March from 18.23 to 18.35. Parity is expected to rise steadily during the remainder of the season and may reach 19 cents by July. The parity of July 15 is the basis for loans of the next crop. The House agricultural committee is considering working out legislation for a definite formula for calculating parity prices, the objective of which is to raise the purchasing power of the farmer.

The CCC reports repayments on 618,088 bales of the 1941 loan up to April 11. Loans made to that date total 2,188,387. Net loans on April 11 amounted to 1,570,299. The CCC opened bids on 300,000 bales of its own stocks April 13. No announcement has been made up to the writing of this of the amount accepted. It will open bids on 33,000 bales of pool stocks from the 1938-39-40 crops on the 20th.

Latest published figures of the CCC show it held 4,535,000 bales at the end of March, of which 3,421,000 were available for sale and 1,111,000 reserved for lend-lease and other requirements. Spot men estimate the desirable cotton in the amount available for sale at 1,343,000 bales. Officials of the CCC say they will continue their selling campaign through June.

Acreage forecasts range from 23,464,000 to 24,981,000. Last year's acreage was 23,250,000. The crop has gotten off to a rather late start but recent weather has been favorable and planting is now making good progress. Labor is scarce and prices demanded are high.

Consumption of 966,631 bales in March is the largest on record. It would undoubtedly have exceeded 1,000,000 bales except for the strike in New England. Consumption for eight months is 1,175,000 bales larger than last year. These figures indicate that consumption for the season will run between 11,250,000 and 11,500,000 bales. Mill stocks have increased somewhat but warehouse stocks have shrunk 860,000 bales within a month. Details of the Census report are given in another column.

CENSUS REPORT OF COTTON CONSUMED AND STOCKS

Consumption of Lint

Bales—	This Season	Last Season
In United States, March	966,631	854,767
In United States, February	893,745	793,428
In United States, 8 months	7,246,739	6,071,641
In Cotton Growing States, March	822,602	723,177
In Cotton Growing States, 8 months	6,157,520	5,181,462
In New England States, March	113,916	102,189
In New England States, 8 months	865,035	714,452
In All Other States, March	30,113	29,410
In All Other States, 8 months	224,184	175,727
Mill Stocks		
In United States, March	2,651,614	1,912,750
In United States, February	2,579,789	1,906,835
In Cotton Growing States, March	2,140,567	1,556,609
In New England States, March	427,252	302,908
In All Other States, March	83,795	53,233
Warehouse Stocks		
In United States, March	11,352,967	13,244,740
In United States, February	12,213,134	14,045,487
In Cotton Growing States, March	10,965,300	12,885,287
In New England States, March	366,944	348,217
In All Other States, March	20,723	11,236
Active Cotton Spindles		
In United States, March	23,096,479	22,806,104
In United States, February	23,077,722	22,777,280
In Cotton Growing States, March	17,484,645	17,239,492
In New England States, March	4,971,328	4,946,042
In All Other States, March	640,506	620,570

Cordage, Twine and Duck Directory

Davison Publishing Co., Ridgewood, N. J., has published the latest edition of "Davison's Cordage, Twine and Duck Trade", a register of the cordage, twine and duck trades, including awnings, tents, sails, cordage, woodenware and hardware jobbers, bag and ship chandlers and kindred lines. The price is $3.50 per copy.

Armstrong's Cork Cots are on more active spindles than any other roll covering

SEVENTEEN years ago, Armstrong introduced something brand-new to the textile industry . . . a seamless cork cot. Today, because they spin better yarn at lower cost, Armstrong's Cork Cots are serving 9,750,000 active spindles—more spindles than are equipped with any other roll covering.

How do these Cots do it? The answer lies in the careful way Armstrong makes them . . . fully utilizing cork's unique physical properties. Cork has a *high coefficient of friction*, which eliminates eyebrowing and produces uniform drafting with minimum slippage; cork's *resilience* helps it "come back" after being grooved by top roll laps or hard ends; cork's *resistance to lateral flow* helps maintain a truer drafting surface and assures satisfactory Monday morning start-up.

What's more, Armstrong's Cork Cots are the most economical roll covering. Their first cost is low, and cork's *extra durability* gives them a longer life than other roll coverings. In addition, each Cot can be rebuffed three or four times—made like new—for as little as ½¢ per rebuffing. Total service life is four to five times that of old-type coverings!

Combine all these advantages and it's easy to see why the mills now getting peak production are the mills "on cork." In the interest of maintaining maximum yarn production, our staff of trained specialists is always ready to aid in the solution of your roll covering problems. Armstrong Cork Company, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S CORK COTS

ACCOTEX COTS · ACCOTEX APRONS

TIMELY NEWS ITEMS with a TEXTILE SLANT

B. W. Clark, vice-president in charge of Westinghouse Electric & Manufacturing Company's merchandising division, has been made vice-president in charge of sales of the company. He succeeds **Ralph Kelly,** who resigned to become executive vice-president of the Baldwin Locomotive Works. Mr. Clark has transferred headquarters from Mansfield, Ohio, to Pittsburgh, Pa., and, in addition to supervising the sale of apparatus, will be responsible for co-ordinating all sales of the Westinghouse company and its subsidiaries. **John H. Ashbaugh** has been made manager of the company's merchandising division, for which he has been manager of manufacturing and engineering since 1941.

M. L. Sloan has been advanced from assistant manager of the lamp department, General Electric Co., Nela Park,

Mr. Sloan

Cleveland, Ohio, to manager. He has been at Nela Park since 1913, and assistant manager of the lamp department for 11 years.

H. H. Hill, Charlotte (N. C.) manager for American Blower Company, has been transferred to the company's office at Washington, D. C., as assistant to **H. H. Downs,** manager there, **E. S. Dewitt,** who was formerly assistant to Mr. Downs, has been transferred to Charlotte succeeding Mr. Hill as manager there.

J. H. Matthews and **O. H. Cilley** have been elected directors of Raybestos-Manhattan, Inc. Mr. Matthews is assistant general manager of The Manhattan Rubber Mfg. Division of the company, Passaic, N. J., and Mr. Cilley is assistant general manager of the United States Asbestos Division, Manheim, Pa.

Arthur R. Wachter has joined the American Viscose Corp., 350 Fifth Avenue, New York City, as head of the "Crown" test division. He will supervise the company's "Crown" tested plan under which fabrics woven or knitted from "Crown" brand rayon yarn and staple fiber are tested for

Mr. Wachter

service qualities. Mr. Wachter, who is co-author with **Kenneth H. Barnard** of the current series on "Modern Rayon Finishing" in "Cotton," was for 7 years manager of the rayon division of the print works of Pacific Mills, Lawrence, Mass., and previously was manager of the Williamsport (Pa.) works of the National Silk Dyeing Co.

Lionel P. Adams, secretary of the Textile Export Association of the United States, has been commissioned a second lieutenant in the U. S. Army Air Corps and reported for duty April 2. During his absence his duties will be assumed by **John W. Murray,** editorial director of The Cotton-Textile Institute, Inc.

H. B. Higgins has been elected executive vice-president of the Pittsburgh Plate Glass Co., Pittsburgh, Pa. He

Mr. Higgins

has been with the company since 1905, and has headed the company's merchandising division.

W. S. Terrell has assumed the duties of sales manager at The Terrell Machine Company, Charlotte, N. C., in addition to his work of production planning. In the sales work he succeeds **J. J. Wilson,** who, as announced last month, resigned to join the organization of the Sperry Gyroscope Co., Brooklyn, N. Y. **M. H. Ridenhour** is assisting Mr. Terrell in sales work in the Charlotte area.

Walter M. Mitchell, manager of the company's Atlanta office, has been elected a director of the Draper Corporation, Hopedale, Mass.

Standish W. Holmes, for 12 years in the advertising department of the American Viscose Corporation, has been transferred to the company's "Fibro" rayon staple fiber sales division. He joined the company in 1930.

David Donovan has left the advertising department of Interchemical Corporation to receive a commission as ensign in the U. S. Navy. He is now on active duty at the Naval Air Station, Jacksonville, Fla. **Elon R. Brown,** formerly of Station KMAC, San Antonio, and the Lambert Pharmacal Co., has joined Interchemical's advertising staff.

Research on Warp Sizing of Spun Rayon to Be Extended

Plans for broadening the scope of the research on warp sizing of spun rayon yarns now being carried out under the auspices of Textile Research Institute, Inc., were formulated at a conference held in Washington. Fifty representatives of textile mills, manufacturers of sizing materials, and machinery companies attended.

It was generally felt that the practical experiments on sizing spun rayon warps now being conducted at North Carolina State College Textile School should be supplemented by fundamental studies on properties of sizing materials. Possibility of further extending the investigation to include blended yarns containing spun rayon in admixture with other fibers was also suggested.

Warp sizing of spun rayon as carried out today is largely an empirical procedure, according to Dr. Milton Harris, director of research of Textile Research Institute, Inc. Fundamental research on the adhesiveness, strength, flexibility, film-forming, and other properties of sizing materials should yield data which would permit the setting up of specifications for sizes which would give satisfactory results from the standpoint of both the weaver and the finisher.

Everything we conserve actually adds to our production!

This helpful book covers:
Engineering the drive Installations Slippage Repairing Belts Belt Dressings Storage Standard Reference Tables and Formulas.

A FREE BOOK *your belt men need!*

It is our belief that the greatest service we can render in this production drive is to broadcast factual data that will make belts last longer and produce more. Accordingly, we have prepared a pocket-size manual on belt care, covering briefly and clearly the essentials of proper design and maintenance of leather belt drives.

This booklet is offered freely to concerns which wish to have copies for their maintenance men as a guide to proper care of leather belts. Longer life without costly down-time means increased production, which you can count on when high grade leather belts possessing high coefficient of friction are wisely installed. Sign and send the coupon below to–

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TREADED
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GENTLEMEN:
Please send me a copy of your booklet "How to Make Your Leather Belts Last Longer . . . . Produce More!"

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City .....

NEW EQUIPMENT and MATERIALS

Synthetic Rubber Thread

The B. F. Goodrich Company, Akron, Ohio, announce the development of a synthetic rubber thread, made from Ameripol synthetic rubber. Primarily this development is for military purposes, to conserve the natural rubber thread that formerly went into products used by the armed services. At present there is no possibility of any of the thread being diverted to the manufacture of civilian products, but it is hoped future circumstances will allow that course. Some of the potential military uses for the synthetic rubber thread are in harness for parachutes, gas masks, and respirators, as well as in other equipment.

As now planned, the thread will be sold to textile manufacturers for military purposes in either the "naked" or uncovered form, or covered with yarn by the rubber manufacturer. "Naked" rubber thread is later covered in the textile mills; cotton is the textile fiber most commonly used, although rayon, nylon and silk are also employed.

Tests on the new thread show 700 per cent elongation, comparable to the rubber thread previously made from natural rubber compounds. It resists the effects of dyeing or bleaching much more than the natural rubber products, resists the action of body oils carried in perspiration better, and has a greater resistance to chafing or cutting by the needles of a knitting machine. It is non-toxic and made only in black. It may be handled with the same machinery in the textile mills as the previous natural rubber thread, with no modification in machinery, as it is made in the same gauges.

The manufacturers feel that when the supplies of synthetic rubber are increased beyond the demands of the military forces that this new thread will prove applicable in many of the former uses of natural rubber thread, particularly in the manufacture of men's hose, in girdles, brassieres and foundation garments.

◆

For Wood Shingle Roofs

The Truscon Laboratories, Detroit, Mich., have developed Truscon Creoleum wood preservative, obtainable in the same colors as shingle stain. Besides its content of creosote, the product contains wood preserving oils which are absorbed and hardened in the pores of the wood.

◆

Static-Discharging and Oil-Resistant V-Belts

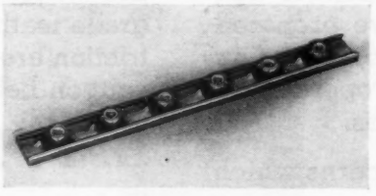
The B. F. Goodrich Co., Akron, Ohio, announce the availability, in popular sizes of A, B and C cross-sections, of the static-discharging and oil-resistant v-belts introduced some time ago; previously available only on special order.

The static-discharging v-belt accomplishes its function through the use of a rubber in the belt covers which is so compounded as to actually conduct electricity. Static charges are not built up because the electricity flows continuously through the belt to the sheave and out through the frame of the machine. When the machine is grounded, no possibility of sparking is present.

◆

Gang Channel Nuts

Elastic Stop Nut Corp., 2332 Vauxhall Road, Union, N. J., announce that Elastic Stop gang channel nuts, widely applied in the aircraft industry, are now available for testing on applications in general industry where a multiple, self-locking, bolted fastening is required. The strips are factory-assembled, and it is necessary only to rivet or otherwise fasten them to the structure. They consist of specially designed Elastic Stop nuts, with four lugs at the base and installed at specified intervals in a metal channel strip which is preformed to accommodate the nut lugs under longitudinal flanges.



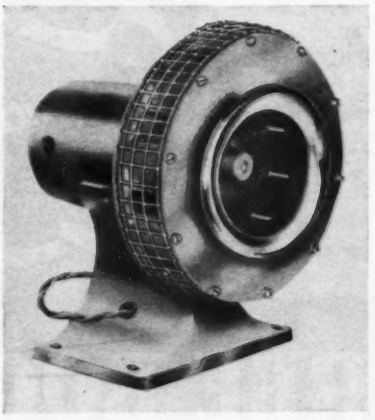
New Shatter-Resistant Coating for Glass

Wilbur & Williams Co., Park Square Bldg., Boston, Mass., has developed a new transparent coating for glass, which is shatter-resistant. It comes in liquid form, ready for use, and can be applied by spraying or brushing. It passes sunlight with very little absorption, it is explained, and thus weathers well without discoloration. It dries quickly, forming a film with a tensile strength of from 3,000 to 5,000 pounds per square inch; with elongation of over 20 per cent, permitting considerable movement of the glass without rupture of the film.

◆

Inside-the-Plant Air-Raid Siren

Breuer Electric Mfg. Co., 5100 Ravenswood Ave., Chicago, Ill., have announced a new type of air-raid siren especially designed for industrial use. There are two models: one for small departments, offices, laboratories, stock rooms, etc.; and a larger one for manufacturing areas. The sirens are equipped for either a.c. or d.c., and operate from any ordinary light current.



◆

V-Belt Improvements

Goodyear Tire & Rubber Co., Akron, Ohio, have announced improvements in their multiple v-belts based on research work and field testing. The new product is sheathed in a new, tougher black cover to insure longer wear, more uniform pull and higher heat resistance, taking advantage, the company explains, of the point that the toughest, longest-wearing compounds are black in color because of the use of black carbon stocks. The "compass" cord construction, it is pointed out, concentrates the load-carrying cords in the neutral axis where all pull evenly. The new, black E-C cord multi-v belt is made in all standard cross-sections and lengths and is available in sets, precision-matched under operating tensions.

Luminaire for High or Low Bay Areas

Westinghouse Electric & Mfg. Co., lighting division, Cleveland, Ohio, has announced a new vapor-tight Millite luminaire for incandescent or mercury lamps, especially adapted for extreme service locations wherever acid fumes, dust, smoke or excessive moisture is present. Being weatherproof, it may be used also for outdoor applications. It

consists of three parts, a porcelain-enameled steel reflector, a socket assembly, and a hinged glass cover. It is arranged for conduit mounting. Vapor-tight sealing is obtained with a heavy, treated asbestos gasket between cover and housing. An impact-resisting glass lens ¼-inch thick is designed to withstand sharp temperature changes, and if broken, shatters into small dull fragments rather than splitting into large pieces.

◆

Industrial Humidifier Announced by Carrier

Carrier Corp., Syracuse, N. Y., have announced a new industrial humidifier for use where control of humidity is important in manufacturing, or for the storage of hygroscopic materials. The humidifier is available in two capacities, and will provide 4,800 or 6,150 cubic feet of humidified air per minute, and evaporate up to 96 pounds of water per hour. It cleans, circulates and heats the air during winter; and may be used to provide evaporative cooling, cleaning and uniformly circulated air in summer—in addition to humidification. The unit is for ceiling mounting, and is built in two sections; it includes fan and motor, humidifier pack, heating coil, drip pan, dampers, lint catcher and housing.

◆

Vertically Mounted Rotary Pump

Blackmer Pump Co., Grand Rapids, Mich., have developed a new vertically mounted rotary pump involving the swinging vane principle. It has a capacity of 150 g.p.m. at a pressure of 100 psi and is powered by a 15-hp gearhead motor, 300 r.p.m. on the pump shaft. Because of the small floor space required for the vertical mounting, it is especially applicable where floor space is at a premium, it is pointed out.

◆

New Colors

Two new colors have recently been added to the line of dyestuffs produced by the Calco Chemical Division of the American Cyanamid Company, Bound Brook, N. J. One is Calcochrome Orange LC which is offered for better grades of men's wear as a component in the formulation of brown or mode shades; it is of good fastness to light with excellent working properties, it is stated. The other is Calcochrome Brown RV Conc., for use as a brown component in formulations for producing Army and Marine Corps olive drab; it is said to possess extreme fastness to light and especially good dyeing properties.

◆

Hosiery Abrasion Tester

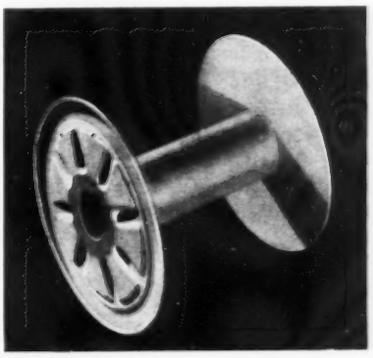
United States Testing Co., Inc., Hoboken, N. J., have developed a new abrasion (wear) tester so that hosiery can be tested for wear under moist conditions; it measures the resistance to abrasive wear of the heels and toes of all kinds of hosiery. The hosiery is tested by mounting the toe caps or heels of the samples over a metal surface and causing it then to oscillate mechanically back and forth in contact with a wearing surface of special hosiery abrasion fabric held under constant tension. The number of strokes necessary to wear holes in the toe caps or heels is noted and recorded. In order to simulate wear under moist conditions, a wick, immersed in water, was devised and so placed that a slight contact is made between the wick and the sample at the end of every second stroke.

It has been found that the presence of excess moisture in hosiery at points of wear decreases the resistance to abrasion to a noticeable degree, and this new test will permit a more accurate study of the wearing properties of substitute yarns.

◆

Sectional Warp Beams for Tricot Knitting

Hubbard Spool Co., 1627 West Carroll Ave., Chicago, Ill., have designed electro-welded steel sectional warp beams for tricot knitting. Weight is



held to a minimum, it is pointed out, without sacrifice of strength or of rigidity, by the electro-welding of all parts. Tests have been made in several tricot mills with satisfactory performance reported.

◆

Finishing Process for Cuffless Trouser Bottoms

Celanese Corporation of America, 180 Madison Ave., New York City, has introduced a patented finishing process for the bottoms of cuffless trousers to give a necessary weight and body to

---

● "How Are Balls Made Round." is the title of an interesting booklet by S K F Industries, Inc., Philadelphia, giving in popular language a clear description of the process. In the above photograph, brightly polished balls and rollers parade before keen eyes in the company's scientifically lighted and air-conditioned inspection room. Girls, wearing white gloves, scan balls and rollers for surface defects, with the same degree of visual concentration needed in detecting flaws and scratches on costly jewels. White gloves protect the balls and rollers from moisture . . . . . .

them. The process involves the placing of the company's white Lamicel fabric along the bottom of the trouser leg and securely stitching it by machine one-half inch from the bottom; pressing laminates it to the fabric, and felling machines are unnecessary. It is applicable to trousers of various materials, including rayons.

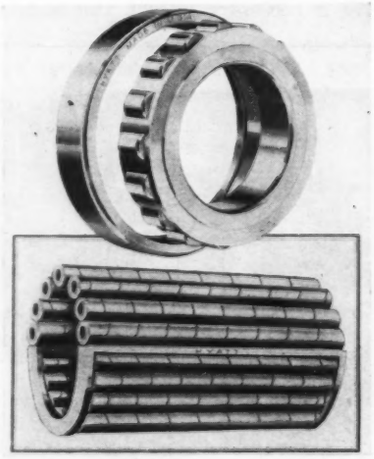
◆

Single-Stage Process for Bleaching and Scouring

A single-stage process for bleaching and scouring yarns in stainless-steel package machines, which forms a new application of Textone, was described by E. G. Fenrich, of the Mathieson Alkali Works, Inc., at an April meeting of the Philadelphia section of the American Association of Textile Chemists & Colorists.

For a package machine with a 450-gallon capacity, the following solution is used, according to Mr. Fenrich: synthetic detergent, 1⅓ pounds; Textone, 4 pounds; tetrasodium pyrophosphate, 16 pounds; available chlorine as sodium hypochlorite, 8⅓ pounds.

All the chemicals except the sodium hypochlorite are dissolved and circulated for 5 minutes at a temperature of from 95 to 100 degrees F. The hypochlorite is then added, and the circulation is continued at the same temperature for 45 minutes. Then the temperature is raised to 200 degrees F., and circulation is continued for another 45 minutes. Bleaching occurs during the first part of the operation; scouring continues as the temperature is raised and the chlorine content of the bath is gradually depleted.



• How engineering, metallurgical and manufacturing science over a half century have met industry's anti-friction bearing demands is pictured as above by Hyatt Bearings Division, General Motors Corp., on their 50th anniversary. The first roller bearing built in 1892 by the inventor, John Wesley Hyatt, with its helically wound rollers assembled loosely in a half case, was a major contribution of its day. It is shown contrasted with a precision Hyatt roller bearing of 1942, with many times the capacity of its prototype and held to tolerances and uniformity of size undreamed of 50 years ago.

After this treatment, the yarn is washed in hot water at 180 degrees F. for 5 minutes and again in water at 150 degrees F. for 5 minutes.

Mr. Fenrich said the use of Textone to activate hypochlorite substantially reduces the total amount of chlorine consumed in bleaching.

◆

Quick-Hardening Cement for Patching Concrete

Smooth-On Mfg. Co., Jersey City, N. J., have announced a new product, Smooth-On No. 7B quick patch cement, for quick patching of cracks, ruts, and shallow holes in concrete floor. It has an iron base, hardens overnight, and strengthens with age, it is explained.

◆

Luminaires for Protective Lighting

Westinghouse Electric & Mfg. Co., lighting division, Cleveland, Ohio, have announced new Fresnel luminaires for lighting industrial fences and areas for protection against sabotage. The units may be mounted on poles and building walls, and consist basically of a hood with socket and receptacle, mounting bracket, a reflector and lens assembly. The hood is made of cast iron. The lower part of the casting has a flange for watershed and breather to avoid creation of a vacuum due to sudden cooling of the luminaire by rain. Moisture-proof felt gaskets form a weather-proof and bug-proof seal between the hood and reflector. Units with side mounting plates are gasketed with graphitized asbestos.

◆

Ring Traveler Patent

A. Dewey Carter, of Gastonia, N. C., has been awarded a patent on a ring traveler in which openings are provided in the traveler, and louvres or vanes extend outwardly from these slots, and as the traveler moves around the ring, air will be forced downwardly through the slots which will cool the traveler and will also blow lint from the ring. One form has slots and louvres on both sides of the traveler so as not only to clean and cool the ring, but also to cause the air striking the vanes to have a leveling effect on the traveler.

◆

New Load-Center Unit Substation

Allis-Chalmers Mfg. Company, Milwaukee, Wis., have announced new standardized load-center unit substations in sizes from 100 to 2,000 kva. They are compact, co-ordinated and factory-built, and may be installed anywhere in industrial plants or power distribution centers. The substation consists of a metal-enclosed incoming-line section, a throat-connected transformer and a low voltage feeder section. Installation is quick and easy, it is explained; the two- or three-component sections shipped from the factory are simply throat-connected and the power leads attached. The substations are available for either indoor or outdoor service.

◆

"Dissertation" on "Weaving Diseases"

The Industrial Rayon Corporation, 500 Fifth Ave., New York City, has just published a "dissertation" on "Weaving Diseases—Their Causes and Preventives", in which it prescribes "a remedy for certain illnesses and disorders prevalent in the weaving of rayon fabrics." Illustrated by photo-micrographs which show how broken filaments, other yarn imperfections and knots impair the quality of some woven rayon fabrics, the booklet explains in detail Industrial's continuous process which practically eliminates such imperfections.

Published under a label which suggests a mustached proprietor of an old apothecary shop, the booklet is introduced as follows:

"Loyal to medical ethics, this booklet is entirely non-commercial and is not to be construed as an effort to further the immediate sale of our product, whose present supply has been entirely allotted. It is intended that the information advanced herein will be absorbed and held in readiness for the time when present conditions of stringency have passed."

Close-up photographs showing the various functions of the continuous spinning process, and a comparative chart illustrating the various methods of viscose rayon yarn production, explain how this yarn makes better cloth, with fewer seconds, greater efficiency and lower production costs.

◆

Leather Belt Ads Are Increased

The American Leather Belting Association, 53 Park Row, New York City, has started its second year of advertising with a large increase in appropriation, warranted by a substantial upswing of sales in 1941. The backbone of the campaign is a strong industrial paper presentation; double-page spreads in bleed and color featuring "The Production Drive" and the "Modern Group Drive" are being used. The improvement in modern leather belting brought about by research in the laboratories of leading leather belting manufacturers, leading technical colleges and research laboratories is being emphasized in the copy. McLain Organization, Inc., Philadelphia, handles the advertising account.

Keep Cards Producing Clean Stock

Stop using dripping, leaking oil that leaks from bearings to rot card clothing and soil stock,--- failing to lubricate dependably.

Most mills get highest production of clean stock and keep cards in steady operation with drip-less, waste-less NON-FLUID OIL, that outlasts oil many times over.

Write today for free testing sample and bulletin, "Lubrication of Textile Machinery"

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York, N. Y.

Falls L. Thomason, Charlotte, N. C.
Southern Agent

WAREHOUSES:

Charlotte, N. C.
Greenville, S. C.
Atlanta, Ga.
Providence, R. I.
St. Louis, Mo.
Chicago, Ill.
Detroit, Mich.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

Certified Climate

A Textile Necessity

MAKES possible a better product, frequently from lower grades of staple. Production is often improved as much as 2½ to 3 per cent. Certified Climate has been known to pay for itself in less than a year.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

N. BARNARD MURPHY, who as reported in the February issue of COTTON had been made executive vice-president of The Trion Company, Trion, Ga., was in April elected as president of the corporation. Mr. Murphy has been at Trion for a number of years, having previously been superintendent, and later vice-president and general manager.

W. O. REED has resigned his position at the Ranlo Mfg. Co., Gastonia, N. C., to accept a position as general overseer of spinning at Brookside Mills, Knoxville, Tenn.

OTIS WILLIAMS has been promoted from overseer of spinning at Jefferson Mill No. 3, Royston, Ga., to night superintendent of Jefferson Mills No. 1 and No. 4 at Jefferson, Ga.

LELAND JORDAN, production manager of the Ashland Corporation, Jewett City, Conn., has resigned to enter military service. He has been succeeded by OSCAR MARC-AURELE, formerly general manager of the Velvet Textile Corporation, West Haven, Conn.

T. C. DREW, JR., has been transferred from the superintendency of the Startex Mill, Tucapau, S. C., to a similar position at the Gaffney (S. C.) Mfg. Company, succeeding R. W. CARR, who has been placed in charge of costs at these two plants and the Spartan Mills, Spartanburg, S. C.

W. M. ALLISON has been promoted from overseer of carding to assistant superintendent at Tucapau, and is succeeded as overseer of carding by J. F. ODAM, formerly night superintendent of Statesville (N. C.) Cotton Mills. JOE C. COBB is general superintendent at Tucapau.

H. E. MILLER has resigned as overseer of spinning at Piedmont Cotton Mills, Egan, Ga., to accept a similar position at Brighton Mills, Shannon, Ga. He is succeeded at Piedmont by A. S. GRIFFITH, formerly superintendent of Alabama Mills, Inc., Jasper, Ala.

WILLIAM A. NEWELL, an honor student at Lowell Textile Institute, has entered voluntary service in the army. He is a son of ROBERT NEWELL, of the Ashland Corporation, Jewett City, Conn.

HARRY C. JACKSON, formerly connected with the Morton Machine Works, Columbus, Ga., as mechanical engineer, has been promoted to first lieutenant at the New Orleans Army Air Base. His brother, PIERCE, has been called into the army as second lieutenant.

H. S. ELLIOTT has been called into active duty as lieutenant at Aberdeen, Md., in the ordnance department. Mr. Elliott was formerly with Mill Devices Company and Carter Traveler Company, divisions of A. B. Carter, Inc., Gastonia, N. C.

C. L. POOLE, formerly with Brookside Mills, Knoxville, Tenn., has become assistant superintendent of carding and spinning at Judson Mills, Greenville, S. C.

D. R. SENN, some years ago general superintendent of the Sibley and Enterprise mills in Augusta, has become associated with the Riverside Mills, Augusta, Ga. in charge of maintenance and engineering work.

E. T. SNODDY is now overseer of weaving at the Ware Shoals (S. C.) Mfg. Co. He was formerly at Erlanger, N. C.

W. H. CONNOR has become overseer of spinning at the Avondale Mills plant in Birmingham, Ala. He was formerly with Virginia Mills, Inc., Swepsonville, N. C.

T. M. FORBES, secretary of the Cotton Manufacturers Association of Georgia, was recently made first vice-president of the Atlanta Rotary Club. RICHARD P. SMITH, sales promotion manager of COTTON, is secretary of the club.

C. S. Cox has been made overseer of weaving at the Apalache plant of Victor-Monaghan Company, Arlington, S. C. He was formerly second hand at the company's Victor plant in Greer.

GORDON A. BERKSTRESSER has been elected vice-president and a member of the executive committee of the Roanoke Mills Co., Roanoke Rapids, N. C., and has similar offices in the Patterson Mills Co. He has been associated with these companies in a managerial position for several years.

PAUL GROOVER has resigned as assistant manager of the Biddeford (Maine) plant of Pepperell Mfg. Company, to become associated with Pacific Mills, with headquarters in Lyman, S. C., as assistant to CLIFFORD B. HAYES, vice-president in charge of the Pacific plants at Lyman and Columbia, S. C.

FRANK PATE, who recently resigned as assistant superintendent of the Shawmut (Ala.) Mill Division of West Point (Ga.) Mfg. Company, to join the Wehadkee Yarn Mills, of Rock Mills, Ala., and Athens, Ga., is treasurer of the latter corporation.

ARTHUR L. BURNET, JR., has been made general superintendent of the cotton yarn mills of Burlington Mills Corp., at Fayetteville and Smithfield, N. C. Mr. Burnet, recently with the woolen mill in Union, S. C., was for five years previously with the Ware Shoals (S. C.) Mfg. Company.

B. H. BRISTOW DRAPER, JR., has been made treasurer of Draper Corp., Hopedale, Mass., succeeding the late G. RUSSELL GOFF. He is a son of the president of the corporation and for several years has been assistant treasurer and director of purchases.

ROBERT F. BOWE, of Hesslein & Co., New York City, has become associated with his brother, WILLIAM F. BOWE, in Augusta, Ga., in the paving contracting business, including the paving of runways for several large airports in the Southeast.

NORMAN E. ELSAS, president of Fulton Bag & Cotton Mills, Atlanta, Ga., has been elected president of the Associated Industries of Georgia.

Obituary

CHARLES CHENEY, 75, former chairman of the board of Cheney Bros., Manchester, Conn., passed away on April 12 after a brief illness.

C. C. STOKES, 58, secretary-treasurer, Cheraw (S. C.) Cotton Mills, passed away in April. He had been with the company for 20 years.

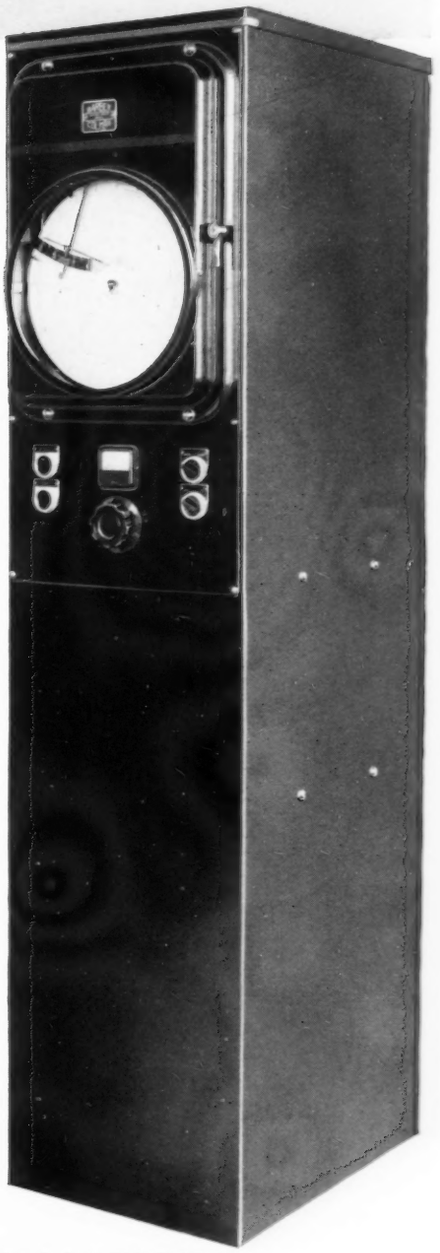
T. C. ANDREWS, 61, for many years overseer of weaving at the E. M. Holt Plaid Mills, Burlington,, N. C., passed away in April.

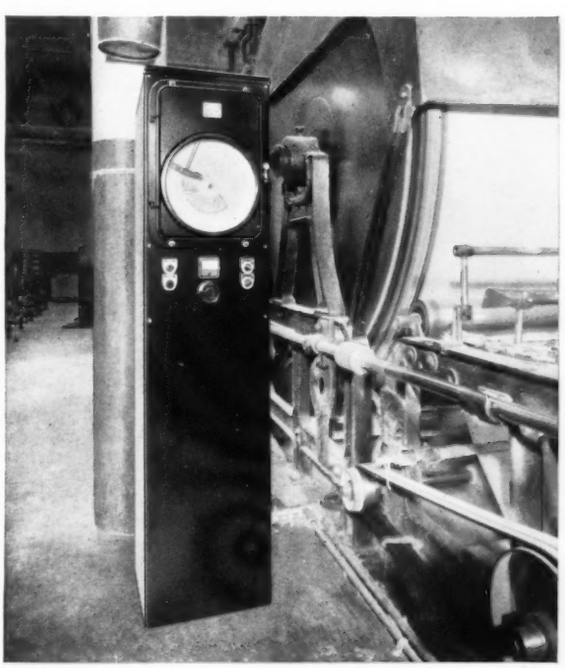
FRED A. GOODSPEED, 63, purchasing agent of the Fitchburg (Mass.) Yarn Mills, passed away last month.

Compensates for the variables In Slashing . . .

BARBER-COLMAN MOISTURE CONTENT CONTROLLER

Some of the variables which affect the moisture content in warps are (1) Variable moisture content of material entering dryer, (2) Processing and storage faults, (3) Faulty equipment, (4) Improper machine adjustments, (5) Variations in driving motor speed, (6) Variable size level, (7) Variable size temperature, and (8) Variable cylinder temperature. An installation of Barber-Colman controls will compensate for these variables and permit maximum production of uniform and highest quality. The Barber-Colman Moisture Content Controller will allow the slasher to be operated at maximum temperature and therefore at the highest speed possible to produce the greatest yardage with a constant moisture content.





TYPICAL INSTALLATION...

The illustration at the left shows one of the Barber-Colman Moisture Content Controllers installed on a battery of nine slashers in a well-known New England cotton mill, where it is instrumental in maintaining uniform quality of high-grade sheeting and other products.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

TECA

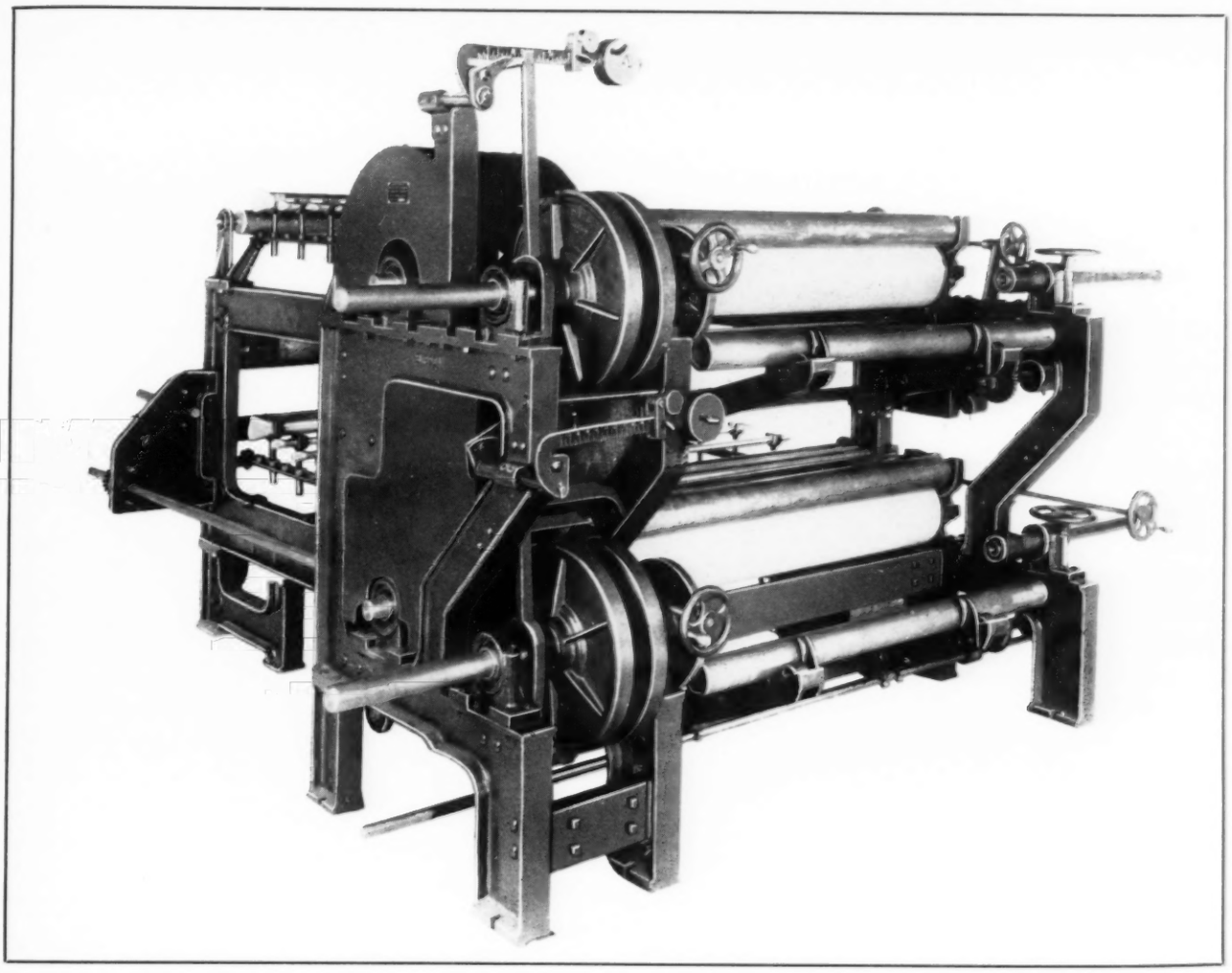
has earned these honors

. . . garment tags which say "it's launderable" . . . assure acceptance for your spun rayons by commercial laundries. More and more new fabrics woven with Teca, Eastman crimped acetate rayon, are passing the tests of the American Institute of Laundering. Teca has earned this laundry approval because it exerts shrinkage control. In blends with other fibers, Teca is a stabilizing influence. Add to this the fact that Teca's crimp makes for extra richness of texture, extra resistance to sagging and crushing, and you have the reasons for the ever-increasing popularity of Teca fabrics.

Eastman

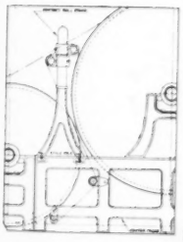
CRIMPED ACETATE RAYON

A. M. Tenney Associates, Inc., 10 East 40th St., N.Y. Sales representatives for Tennessee Eastman Corporation, subsidiary of Eastman Kodak Co.

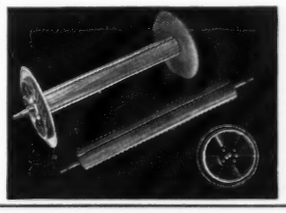


Ball Bearing Throughout

Other QUALITY Products



CONTACT ROLLS for MAXIMUM DRYING



LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.

WILL YOUR SLASHER TAKE LARGER BEAM HEADS?

These slasher head-ends will accommodate beam heads up to 26″ in diameter. Friction is lever type. It is not arranged for either increased friction or double gearing. Neither of these attachments is required, as this type of head is used only for light warps. The length of the double head-ends is 8′10″.

This slasher head-end is furnished with ball bearings in all moving parts.

We also build single head-way fronts for large beams.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

Teamwork—
AN AMERICAN TRAIT

Getting together to solve their problems is characteristic of American businessmen . . . Teamwork is a heritage of these United States.

SONOCO recently demonstrated this when faced with the problems of increasing their production of vital paper carriers to the textile industry. By simple oral agreements between customers and ourselves, we eliminated a bottleneck in manufacturing that has increased our production 10-15%, giving us a safe margin over current demands. Teamwork like this will spell *V-I-C-T-O-R-Y*—sooner.

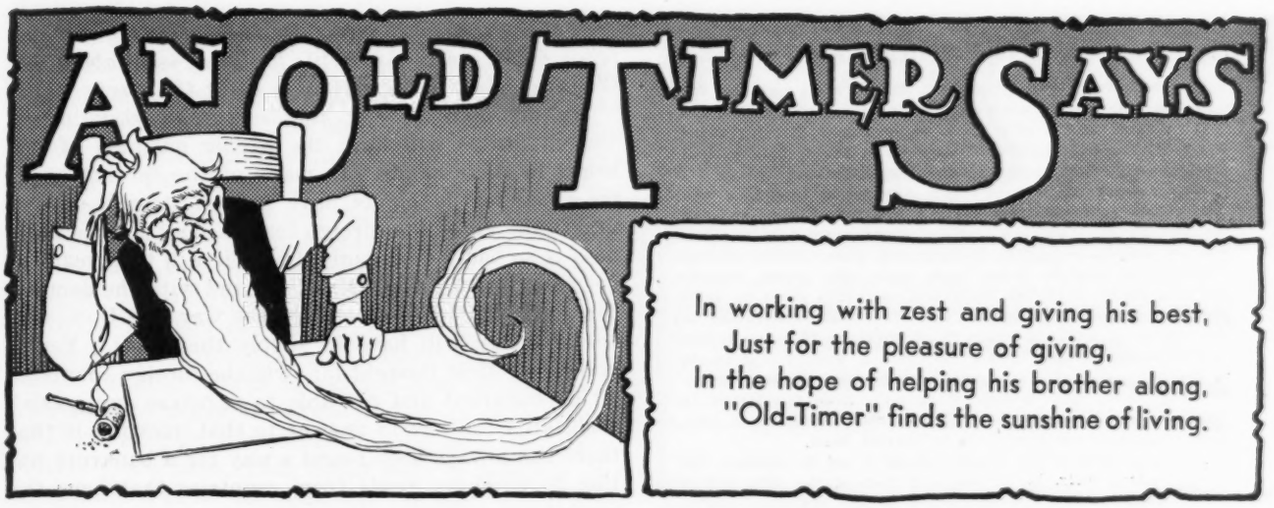
SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

sonoco SERVES THE WORLD PAPER CARRIERS


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Women on Men's Jobs? Sure!

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER's part in the conversation, while those in *italics* represent JIM's part.)

Why the long face, OLD-TIMER? *You look as though you were in deep meditation over some very important problem.*

Just thinking, JIM, just thinking.

Well, now that is fine. Usually when a man is really thinking, that is, if he is giving the subject or problem concentrated thought and will keep at it long enough, and then back up that thinking with research and study—

Hold your horses, JIM. I'm not even thinking about my work—not even thinking about textile mills.

Then, for Pete's sake, what are you thinking about?

What is *everybody* thinking about, these days? War, of course. We think we are the smartest people on earth. We do have the greatest resources of any nation on earth, yet we are getting the pants licked off of us and I can't help but think about how our Government is managed in comparison to the management of some of our large textile firms. Of course we can't criticize our Government; especially in a time like this, but with a President and Congress supposed to consist of our best brains so far as running a nation is concerned, it does seem that there is something lacking somewhere. If a large textile firm, a firm operating a chain of mills, could not get any more coordination—oh, well, JIM, we had better talk about something else.

Anyway, you remember the old axiom which says, "Every advantage has its disadvantage, and vice versa." So, maybe this war will bring a lot of advantages in many ways. For example, the cutting down of our transportation system may be an advantage to the small town, especially the small town merchants, because people cannot get to the large towns to buy merchandise.

Thousands of new uses for cotton may develop on account of a leather shortage and a shortage of many other products which either cotton fiber, cotton cloth, cotton yarn or cotton cellulose can be substituted for. Remember a conversation we had (an article in COTTON) on new uses for cotton where we discussed the possibility of cotton in the liquid state being used for roofing and siding and flooring for buildings? That possibly in the future cotton would not be baled at all but would be handled by air draft somewhat similar to the way small grain, like wheat, is handled now. That cleaning systems may be so improved that it will not be necessary to pick cotton, and all gathering may be done something like the present system of sledding; no more planting of cotton in rows, but sown like wheat. If cotton fiber can be put into solution and then converted into a fine thread (rayon), it is not unreasonable to ask why can't it be made into a plastic to be used as paint or shellac and put a coat on walls, outside or inside, which would last many times the life of our present paints.

Gosh, it would seem that the possibilities are practically unlimited. And, mark my word, JIM, cotton fiber with its adaptability to so many uses is going to come into the greatest diversification of any of our known substances.

With the shortage of rubber, maybe some chemist will find a way to impregnate the cotton cords and cotton fabrics with a solution of cotton fiber which will take the place of rubber. Something like the many products which are now being made to impregnate cotton fabric to make it impervious to moisture and even to acid. Koroseal is now being used to treat cotton cloth for umbrellas, raincoats and many other uses. Koroseal is made from limestone, coke, and salt, we understand, and we believe some firm is going to produce an automobile tire probably made of canvas, like the first tires we had, but treated with some other substance than rubber. Such a tire would probably not last more than 5,000 miles, but it certainly would be better than no tire at all.

Remember, JIM, when World War No. 1 broke out, we were getting most of our dyestuffs from Germany. Just before the United States entered the War a large German submarine brought a cargo to the United States. Well, look at our dyestuff industry now. That

Just a Thought for Mill Executives
Is It Practical?

We understand that the Government is short on tools for manufacturing certain small parts for planes, tanks, shells, etc.

Many large textile mills have well-equipped machine shops and the trained mechanics to operate the lathes, planers, drill presses, etc., which these machine shops contain.

Why doesn't the Manufacturers Association compile a record of this equipment, its possible production, etc., and tell the Government that the textile industry can help win the war not only in furnishing clothing and other textiles but can manufacture airplane parts, tank parts, gun parts, torpedo and gun shells, etc.? The unfinished materials could be shipped in bulk to textile centers and from there distributed to the individual textile machine shops within a 100 mile radius and re-assembled back at the distributing point for shipment to the designated plants where war materials are being manufactured. Even most medium sized mills have two lathes (a large one and a small one), a planer, and a drill press, and, most important, the mechanics to operate them.

The equipment in the machine shops is not in constant use by the cotton mills. It is used only part of the time and is very seldom used at all during the second and third shifts, therefore there are several thousand lathes, drill presses, milling machines, automatic gear cutters, pipe cutters, planers, grinding machines, welding equipment both gas and electric, and many other machines available for war materials production along with trained mechanics to operate these machines on a 24 hour day 7 days per week.

OLD-TIMER

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is what is going to happen to many of the other items which the present war is going to cause shortages of. They will be substituted by something else or our research laboratories will find a way to produce them from other raw materials.

And, of course, every observing business man realizes that the airplane will take this country and also many of the foreign countries somewhat like the automobile did after World War No. 1, but on a much larger scale. With all the automobile factories converted to airplane or airplane parts manufacture, planes will very likely be sold for the price of our lowest price automobiles. And then maybe a prediction OLD-TIMER made several years ago about airplanes will come true. That prediction was: first, that some inventor is going to make such a radical change in the construction of an airplane that many of us will say, "Why in Heck didn't I think of that?" What we mean is that the whole structure of a plane will be changed so it will be easy to land. Landing, we understand, is the most hazardous part of operating a plane, as constructed at present, and when that hazard is over, the average person can soon learn to fly a plane.

The second prediction was that planes will be equipped with engines only large enough to enable the plane to take off and gain altitude, then the engine will be stopped and the plane will glide with the air current or against the air current or across the air current, to its destination. That will be cheap transportation, far cheaper than we have ever been able to have with the lightest, lowest price automobiles. And, incidentally, JIM, the young men who are going into aviation in this war will have a golden opportunity to cash in on their knowledge of planes. The man who comes out of this war as an airplane mechanic or flyer—that is the man who also has business ability to handle an airplane agency—will be our future millionaire.

That all sounds interesting, OLD-TIMER, *but we fellows who are in the textile business, what about us? What is going to happen to us after the war?*

In my opinion, JIM, the textile industry in the United States will have the textile business of the world in their hands. In many of the foreign countries the textile plants have been destroyed and in practically all of the foreign textile countries the business is so badly disorganized that it will take years to get back to its former standing, and with the demand for goods that will come after the war, the U. S. textile industry will have to supply the goods. Yes, I know your first thought is: will the foreign countries all be bankrupt and not able to purchase our goods? Well, all I can say in answer to that question is that there has always been found a way for a bankrupt nation to purchase goods from countries that have the goods.

But, holy smoke, JIM, you should not be asking what is going to happen to us fellows in the textile business *after* the war; but what is going to happen and is already happening to us now? That is what you should be worried about, JIM.

Heck, I am worried, OLD-TIMER, *but what are you going to do about it?*

Well, JIM, there is just one thought every overseer and superintendent should keep constantly in mind these days and that is: How can I teach a woman to run every job I have? Of course there are a few jobs in the mill that a woman can't run—or are there?

Girls on "Men's Jobs"

Since we have seen so many things happen in the mills in the last 25 years we would have bet our last dollar could not have happened or at least would not be practical, we are reluctant to question the possibility of any prediction not coming true. Therefore, if some overseer or superintendent should say, "I am going to teach women to fix looms or to grind cards or to run a section in the spinning room," OLD-TIMER would say, "More power to you, Mr. Overseer or Superintendent, and we hope you will succeed."

And as for the multitude of jobs we now have men on and think a woman can't run—well, you had better get busy, fellows, and get busy darn fast. Do you think this war is going to be over next year or the year after? You very likely will have another "think" coming, therefore you had better put that old "thinker" to work at time-and-a-half time. For example, are you still using men doffers in the spinning room?

Of all the aggravating, cantankerous *-(? confounded jobs in the mill, we think spinning room doffing heads the list and, war or no war, if OLD-TIMER had charge of a spinning room today *there would not be any men doffers in that room.*

For the operation of such a simple job as doffing a spinning frame is, it does seem that doffers can find more things to complain about and be mean about than most any other job. In conversation with a bunch of overseers and superintendents last month about what was the best method to use in doffing, one overseer said with a sigh, "Oh, boy, wouldn't it be a wonderful feeling not to have any doffers?"

And most any overseer of spinning or superinten-

dent would tell you it is a pain in the neck—this doffing business. Then why in heck don't we do something about it? OLD-TIMER can tell you positively that several mills have already started to do something about it. One mill that we discussed the problem with agreed to start experimenting with two of the plans discussed. That is they would start one plan in one of their spinning rooms and the other plan we outlined to them in another spinning room.

You see, fellows, the present method of doffing here in the South grew on us from a local condition entirely. We did not adopt the methods of doffing which were prevalent in the eastern mills when the textile industry began to expand here in the South, and, strange to say, the eastern mills, or at least most of them, adopted the southern mills' way of doffing several years later. This would seem to indicate that the southern mills' methods was the best, and it was, so long as there was an abundance of young men and boys available. But that condition no longer exists and we do not seem to have initiative enough to get out of the rut.

Girls as Spinning Doffers

The coming of textile mills to the South found an abundance of cheap labor principally attracted to the mills from tenant farmers. Father, Mother and all the kids wanted to work, and the fact that Mother worked, leaving no one at home to look after the little fellows who were not quite old enough to work, she brought them to the mill with her where she could keep an eye on them. With no laws to prevent the 8 or 10 year old kids from loafing in the mills, these little fellows were not only in the way but it was a problem for the overseer to keep them out of mischief, and the sooner the overseer could assign some task to them, the less trouble it was for him to control them. Any kid likes to roll a box, and naturally they crowded around the doffers and thereby learned to doff with the result that the doffers were the youngest help in the mill except the other kids who helped Mother or Sister spin, and that is the way we drifted into having four to six doffers to a frame.

Later, as management began to study efficiency and higher percentage of production, older boys, and then men, married men, were graduated into doffers.

Now there are many of us old-timers still hanging around who remember when there were no doffers in the spinning room—spinning frames were operated the same as roving frames—the operative who did the spinning also doffed the frames. Instead of having the frames arranged so one frame would fill up and be ready to doff as soon as the frame ahead of it was started up, the spinner arranged the frames so there would be the maximum amount of time between the doffing of one frame and the time of doffing the next frame. This of course gave the spinner more time to do the spinning, cleaning, etc., between doffs.

Yeah, I heard you: who would bear down the traverse? Don't you worry about bearing down the traverse, Buddy, there are many ways to take care of that.

Of course, back in those days it was different from today because all operatives helped each other. If there was a woman spinner who was too light to bear down the traverse there was a man spinner close by who would bear down her traverse, and she in turn would piece up behind his doffing and run his side while he doffed or cleaned his frames; the same way weavers helped each other before we had smash hands. If a weaver had a break-out her side weaver would run the looms while she put in the break-out, or when a weaver had a warp out and had to clean the loom and oil it, the side weaver would run the looms and vice versa.

One of the mills mentioned which has started experimenting with a new doffing plan has taken a few frames off of the section man and the section man bears down the traverse and is in charge of the doffing on his section. Another mill which has merely replaced men doffers with women has a man to bear down traverses for several sections of doffers. Incidentally, one of these mills has some new spinning frames that the traverse is so easy to bear down on that OLD-TIMER'S prediction is that in a short while the girls will not wait for the man to come to bear the traverse down.

Wake up, you overseers and superintendents, and do something about this doffing problem before you are caught short-handed! The sooner you start the sooner you will find the solution to this vexing problem. There is a way out somehow. OLD-TIMER was superintendent of a large mill during World War No. 1 and one day the overseer of spinning (who is a successful superintendent today) came to him and said, "I haven't had a spindle oiler in two weeks. What am I going to do?" I replied, "Put a woman to oiling spindles, of course." The overseer said, "A woman won't run that dirty job. She will get oil all over her."

OLD-TIMER did not respond to that but went to the store and purchased sufficient oilcloth to make an overall apron and then persuaded a very pretty young girl to start oiling spindles. The pretty young girl was the overseer's daughter.

Get busy, fellows, there is a way to replace men in more jobs than you realize.

Can a woman lay up roving?

Can a woman oil looms?

Can a woman oil fly frames, drawing and cards?

Can a woman run the tying-in machine?

Can a woman run a folder?

Can a woman run fronts of cards?

Can a woman lay up filling?

A few weeks ago while discussing with an overseer the possibility of putting women on certain jobs in his department, he made this remark, "It sure would look funny to see a woman sweeping in a cotton mill."

If that remark doesn't show what convention or custom can do for us, what can?

OLD-TIMER replied, "A woman sweeping in a cotton mill would not look any more comical than a man sweeping in his home."

Because he had never seen a woman sweeping in a cotton mill, it sounded funny to him when OLD-TIMER suggested he change a young man he had on a sweeping job to teach him to run cards and replace him with an older lady whom he said he was compelled to let go because she could no longer run frames.

Don't let convention hold you down, fellows.

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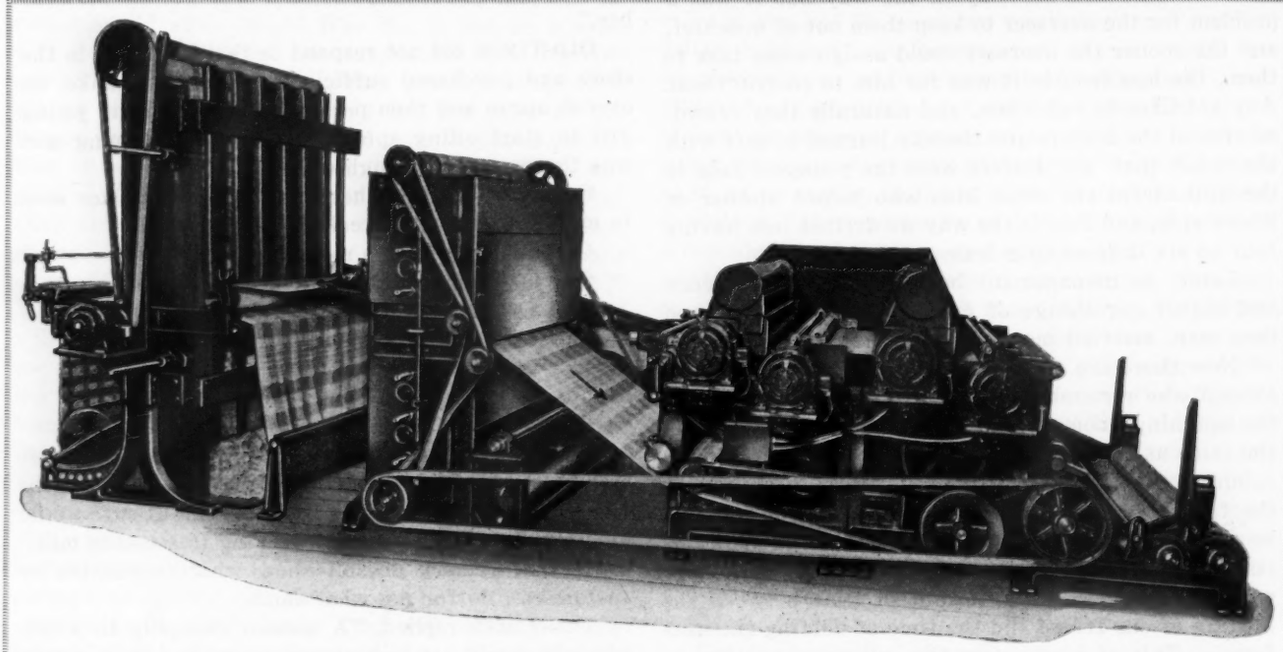

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HOW OTHER MEN MANAGE

Timing of the Harness and Pick

Some practical weavers give their practice on the setting of the harness and the timing of the pick on average plain weaves. Do you agree? . . . . . .

EDITOR-COTTON:

This is in answer to the questions of "CONTRIBUTOR NO. 7349" on page 143 of the April issue of COTTON.

Question: *What is the best timing of the harness on average plain weave?* Answer: Time the harness level when the reed is 2½ inches from the fell of the cloth. This will place the crankshaft about 5 minutes past 6:00 o'clock, using minutes as on a clock rather than degrees as with a protractor. This setting, along with the warp stop motion being raised so that the upper shed becomes slack, will give a better cover to the cloth.

Question: *At what position should the shuttle enter the shed?* Answer: The shuttle should enter the shed when the shed is just open enough for the shuttle not to chafe the yarn. Using the clock dial to illustrate the time, set the crankshaft 5 minutes after 12:00 o'clock, or when the crankshaft is just a little beyond top center. The later you time the pick, the larger and clearer the shed for the shuttle to pass through; but of course you must not time the pick so late that you have to add more force on the pick in order to prevent the loom from banging off and throwing the shuttle out.

Question: *What relation or effect does the timing of the harness have on the timing of the pick?* Answer: If the harness is not timed right, the shuttle will not be delivered into the shed at the proper time, or if the pick is not timed right, the shuttle will not be delivered at the proper time.

Question: *Which should be timed first, or does it make any difference?* Answer: The harness should be timed first, because the interlacing of the warp and filling is a very important mechanical operation and is in line with picking of the loom at the proper time. The harness should be timed first, then the cams set to correspond. The setting of the harness is governed by the type of cloth to be made or the quality of the warp being run. If the warp is weak or soft, the harness should be level with the reed nearer the fell of the cloth. The type cover desired also governs the setting of the harness, rather than the setting of the pick. It can be seen from the foregoing that the harness can be set first as soon as it is known the type of warp being run or the type of cloth required. After the harness is set, then the pick can be set to correspond.

CONTRIBUTOR NO. 7356

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

◆

EDITOR COTTON:

"CONTRIBUTOR NO. 7349" asked on page 143 of your April issue what is the best timing of the harness on average plain weave; at what position should the shuttle enter the shed; what relation or effect does the timing of the harness have on the timing of the pick; and which should be timed first, or does it make any difference?

The timing of the harness depends a lot on the style of goods being run, the construction of cloth, the face desired on the cloth, what kind of goods are being woven, and the width and speed of the loom. On light fabrics, I have always timed the harness later. For instance, with the harness level, set the lay with the reed one inch from the fell of the cloth. On sheetings, the distance is 2½ inches from the fell of the cloth.

As to the relation or effect of the timing of the harness on the timing of the pick, I have always had best results timing the pick first. The timing of the pick should always be checked before timing the harness.

The timing of the pick for broad Draper L Model looms is as follows:

1. Start settings with the shuttle box on the shipper side of the loom.
2. Set pick ball stand so that the distances from the picking shaft box to the back end of the pick ball stand is exactly 2⅜ inches for a 72-inch loom. For other widths, the distances are as follows: 81-inch loom, 2¼-inch; 90-inch loom, 2-inch; 99-inch loom, 1⅞-inch; and 108-inch loom 1½-inch.
3. Set the lay with the crank shaft exactly on top center.
4. Move the cam on the cam shaft so the cam toe is central with the pick ball and in position to start to pick. Fasten cam temporarily in place. It is to be tightened permanently later when all following settings have been made.
5. Set the lug strap holder on 72- and 81-inch looms so that the distance is ½-inch from top of pick arm to top edge of lug strap holder. On 90-inch, 99-inch, and 108-inch looms, this distance is ¼-inch.
6. Set lug strap on picker stick so the distance from picker stick bolt to bottom of lug strap is 7½ to 8 inches on all widths of Model L looms.
7. Set sweep of picker stick so the distance is 9½ to 10 inches on a 72-inch loom. On all other widths of sheeting looms, the distance is 10 to 10½ inches.
8. When all of these settings are made, tighten

the pick cam permanently.

9. Turn the loom over and make the same settings from the battery side.

CONTRIBUTOR NO. 7357

Mechanical and Actual Twist in Warp Yarn

EDITOR COTTON:

In the January 1942 issue of COTTON, page 93, "CONTRIBUTOR NO. 7316" inquires as to the difference between mechanical and actual twist in warp yarn, referring particularly to 14s warp yarn, which I assume would be spun with a twist multiplier of 4.75.

The elements which can affect the twist in the yarn are:

(a) Tape slippage.
(b) Speed of traveler and ringrail.
(c) Shrinkage of yarn due to twist.

(a) Tape slippage is like the little boy in school who was asked, "What is rabies and what can be done about it?" The boy replied, "Rabies is a Jewish priest and nothing can be done about it." If the tapes are kept in good shape the slippage will not be enough to fret over.

(b) The effect of the traveler and ringrail speed on twist was covered very fully in an article appearing in the September 1930 issue of COTTON entitled "Theoretical Twist versus Actual Twist". In a comment appearing with that article it was brought out that when the yarn is wound *overend* from the spinning bobbin, the loss of twist due to the lagging of the traveler and due to the speed of the ringrail is exactly compensated by the addition of twist which occurs when the yarn is drawn over the end of the spinning bobbin. Therefore, the speed of traveler and ringrail has no effect on the actual twist after the yarn is wound or spooled, since practically all warp yarn today is wound or spooled overend from the spinning bobbins.

(c) The shrinkage of the yarn due to twist is important, in that on warp yarns the shrinkage is enough to affect the resulting twist to an appreciable extent.

In 1933 The Lowell Textile Institute brought out a chart showing the effect of shrinkage due to twist. Some readings from the chart are as follows:

Twist Multiplier	Per Cent Shrinkage Due to Twist
3.00	3.1
3.50	4.45
4.00	5.8
4.50	7.1
4.75	7.8
5.00	8.45
6.00	11.1
7.00	13.8

One very important point brought out is that the shrinkage due to twist is *independent of the yarn count*. In other words, the shrinkage on 10s warp yarn will be the same as on 40s, as long as the same multiplier is used.

To get back to the problem of "CONTRIBUTOR NO. 7316," the per cent shrinkage on 14s warp yarn, assuming that a multiplier of 4.75 is used, will be 7.8 per cent. Therefore, for every inch of yarn, or roving, delivered by the front roll there will be .922-inch of yarn *wound onto the bobbin.*

14s yarn, with a multiplier of 4.75, should have 17.76 turns per inch, but if no correction is made for shrinkage, the yarn will have 17.76 turns per .922-inch, which is 19.26 turns per inch *actually in the yarn.*

There are two ways by which the proper correction can be made in figuring the twist gear so that the actual twist per inch will be 17.76:

(1) Multiply the twist desired (17.76) by .922 (4.75 multiplier) and divide the result into the regular twist constant.
(2) Divide the twist constant by .922, and the result will be a constant which can be used for all yarns where the twist multiplier is 4.75. Similarly, other constants can be figured for different twist multipliers.

A good illustration of the effect of twist on the yarn is found in those mills where the spinning frames are fitted with hank clocks. Hank clocks are really "revolution counters" for the front rolls. Therefore, unless a correction is used for contraction due to twist, the production of the frame will be higher when figured from the hank clock than it will be if the yarn is actually weighed. Assuming that the chart as brought out by The Lowell Textile Institute is accurate, the actual production will be 92.2 per cent of the production as figured from the hank clock, where the twist multiplier is 4.75.

If some of the spinners who read this will do a little figuring, they will discover that the shrinkage due to twist is allowed for when they figure their drafts on spinning frames. For instance, on 14s warp yarn with a multiplier of 4.75, if they will multiply the hank roving in the creel by the draft being used, the result will not be 14 but probably about 15.2. After the yarn is twisted and wound on the bobbin, the actual count as sized will be 14s.

CONTRIBUTOR NO. 7346

Recirculation of Air in the Picker Room

EDITOR COTTON:

What benefits result from air recirculation and dust filtration installation in the picker room?

CONTRIBUTOR NO. 7291

EDITOR COTTON:

By all odds, the greater benefits resulting in the recirculation and dust filtration of air in the picker room are to be found in the controlled temperature and the controlled relative humidity of the room. Because of the tremendous volume of air taken from the picker room and previously discharged into the dust house, it was impossible to control the humidity of this room. Unless the laps were allowed to remain in a room and regain the moisture in this room before being taken to the cards, the moisture in the laps might differ from the moisture recorded elsewhere in the picker room.

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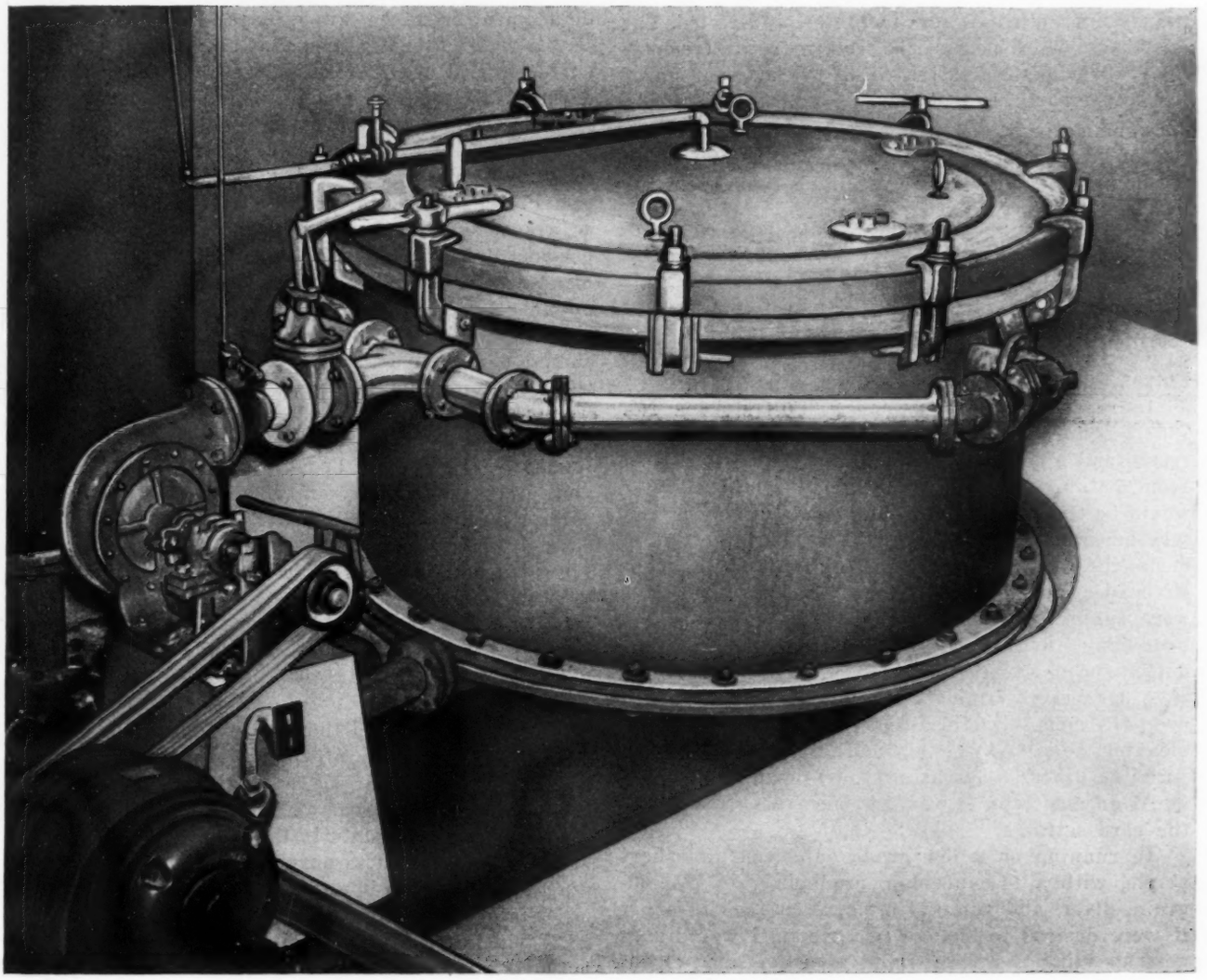

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for the picker room were only to be found when ideal conditions existed outside. The temperature of the picker room might be ideal before the machinery was started (most of us can remember when we would go into the mill before the machinery was turning), then very soon this room was much colder than the rest of the mill.

In actual practice the dust house is cleaned out probably every six weeks or more, and during this cleaning operation was the only time it was entered. If this practice is followed, quite a lot of good stock may pass by worn leathers on the screen sections of the pickers and condensers before being detected. The dust bags, which necessarily require frequent emptying, will bring this excess waste to the attention of the proper party very quickly.

In summarizing, the recirculation of air reduces the cost of heating the picker room, as well as controlling the humidity and giving a constant check on the waste discharge by the fans.

CONTRIBUTOR NO. 7311

Higher Card Speed

EDITOR COTTON:

In regard to the question of "CONTRIBUTOR NO. 7350" as to speeding the licker-in from 400 to 600 r.p.m., and a consequent change in the doffer speed from 6 to 9 r.p.m., the first thing I would consider would be the staple, length and grade of cotton, and whether doing light or heavy carding. By this, I mean, the weight in ounces of the lap and the grain sliver per yard being produced. For instance, if I were running Strict Middling cotton, 14-ounce lap, producing anything up to 55-grain sliver, and my doffer speed were 6 r.p.m., and I wished to change it to 9 r.p.m., I would not want my licker-in speed over 440 r.p.m. I would already be getting sufficient cleaning and anything above this speed would injure the fibers, decreasing the breaking strength, and I do not think it would be necessary to change the card settings.

In running on a low grade of cotton and short staple, with a 14-ounce lap, producing above a 60-grain sliver, and running 6 r.p.m. on the doffer, if it were desired to change to 9 r.p.m., I would suggest speeding the licker-in to give the same cleaning, and I would also open the settings from the feed plate to the licker-in. If I were setting to 7/1000ths and increased the speed of the licker-in and the production, I would change this setting to 10/1000ths. I find that we have to sacrifice some in the breaking strength in making such a change but there would be a cleaner yarn.

I do not think it should ever be necessary to try to run with 600 r.p.m. on the licker-in at this speed on the doffer, unless running an extremely low grade of cotton and a high production.

I have made a test on low grade cotton, 14-ounce lap, with a 60-grain sliver, 9 r.p.m. on the doffer, licker-in speed 450 r.p.m. By increasing the speed on the licker-in to 525 r.p.m., it gave us a cleaner sliver at the cards. However, the breaking strength was lower by a small percentage.

In connection with this subject I would like to quote at length from a chapter on "Speed of the Licker-in" in the Saco-Lowell "Handbook on Carding":

"The action of the licker-in teeth on the fringe of cotton resting on the feed plate is a dual one. First, there is the cleaning action caused by the teeth of the licker-in in moving through the fringe of cotton at high velocity throwing off the heavy impurities, and second, there is the combing or straightening action which prepares the fibers for detachment from the fringe by the licker-in teeth.

"It will be readily seen that the variation in the surface speed of the licker-in teeth will have a very definite effect on the amount of impurities removed. If the surface speed of the licker-in is too great in relation to the cylinder speed, the fibers cannot be properly transferred to the cylinder. This condition will in time cause the loading of the licker-in and as a consequence the card clothing will eventually become damaged. On the other hand, if the detachment is not at a rate sufficiently high to keep the cylinder evenly covered, the web will be full of thin places. The surface speed, therefore, of the licker-in should be adjusted to obtain the maximum cleaning with the minimum loading.

"With this data, it is quite simple to calculate the licker-in speed which will be generally correct as regards even work through uniform detachment and, at the same time, afford opportunity for thorough cleaning. In general, the licker-in speed for a 9-inch licker-in will vary between 425 and 475 r.p.m. For long staple cottons and cards running at very low rates of production the speed may be somewhat less. Under no circumstances should it exceed 625 r.p.m., because beyond this speed dangerous centrifugal forces and air currents which are difficult to control are created.

"It has been found that under the conditions existing in the average mill, operating with conservative speeds and obtaining reasonable production, the capacity of the licker-in to transfer stock from the fringe at the feed plate to the surface of the cylinder is for all practical purposes 3½ grains per running yard of licker-in surface.

"Since the circumference of a 9-inch licker-in is 28.274 inches, which is .785 percent of a yard, the actual stock around the surface of the licker-in is, therefore, only 2.75 grains.

"The following formula has been developed for calculating the proper licker-in speed to obtain satisfactory results with any given production:

$$\text{"Production in lbs. per hour} \times 116.66 \over 2.75 = \text{r.p.m. of licker-in}$$

"As a practical illustration for the use of this formula, assume that a card is producing 11.25 pounds per hour:

$$\text{"r.p.m. of licker-in} = \frac{11.25 \times 116.66}{2.75} = 477$$

"The speed of the licker-in is of the greatest importance, deserving more attention than it generally receives."

CONTRIBUTOR NO. 7352

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Letters from a New Overseer to a Second Hand Back Home

—No. 5—
"Smoky" yarn, winder production, and shop rules

Dear Frank:

In some of my previous letters* comparing conditions here at the Beta Mills with those at the Alpha Mills, where we were both second hands together, I have mentioned shop rules and other rules and regulations under which we operate. All this makes me wonder why it is necessary to have all these rules, regulations, labor laws and so on. It is perfectly natural for us to think of all companies being of the high type of the concerns which own the Alpha and the Beta Mills, and of the officials of all companies as being considerate of the help, and willing to do the right thing by the help as well as by the company they represent. When we stop to think that a few companies and a few officials do take advantage of their employees, then we realize that for the protection of these people and to regulate competition, it is necessary to have some rules.

Another thing that makes it necessary to have more or less definite rules of procedure is that some foremen interpret verbal instructions one way while other foremen will see them another way, or because of some personal dislike they might take an unfair advantage of an employee. When most shop rules are analyzed they are found to be the things that would be done in any well managed mill, by officials who have the interest of all parties at heart.

As an example of such a rule I will cite Shop Rule No. 7—"If an employee, who has a regular job, is temporarily transferred to any job paying a smaller wage than he has been receiving, no reduction in wages shall be made."

Now we have a contract, you do not, yet you people at the Alpha Mills have followed this general policy of taking care to pay a person his regular wages when he was put on a job paying a lower wage. As examples, it is not unusual to put a weaver to filling batteries or hauling filling or warps. If they are regular weavers, not spare hands, you always pay them weavers' wages. A doffer may have to sweep; he is paid doffers' wages. A quiller hand may have to stack yarn; he is paid quillers' wages. And all of this is done without the benefit of a contract or shop rules, but maybe some mills would not do the right thing about this, or possibly certain individual overseers might fail to take care of an employee under these conditions, but we believe that, as a whole, the well-managed, southern mills are fair to their help under these and other similar conditions, whether they have a contract or not.

What Causes "Smoky Yarn"?

Oh, yes, there is a question that I would like to ask you. "Do you ever have any trouble with smoky yarn?"

I do not recall any trouble of this kind while I worked at the Alpha Mills, but we do have quite a bit of black streaks to show up in our duck, which we believe to be from smoke. It will show up in one or two rolls in a set, possibly 30 or 40 yards at a time, then it will fade out, the place being 8 or 10 inches in width, or about the space taken up by one doff of yarn in the creel.

As you know, the mill is located in a rather large city, where there is, of course, considerable smoke. It is located near a river where the atmosphere is heavy part of the time, causing smoke from near-by plants to settle in the vicinity of the mill. A switch engine, handling freight cars in the mill yard, is sometimes fired up while in the yard throwing off a lot of black smoke.

Our own boilers are not fired from May to October, yet we have had quite a lot of the smoky yarn this past summer, so this source of smoke is eliminated for five months in the year. If you can help us with this problem please let me hear from you.

Filling Winder Production

Since coming up here I have been interested in comparing the filling winders with those at the Alpha Mills. The filling yarn here is run on the twisters on single-head bobbins, while at the Alpha Mills filling is run on double-head bobbins. As you know yarn may be pulled overend at a much higher rate of speed than is possible with a "side" spindle, so the winder spindles here at the Beta Mills are run at about 2,200 r.p.m. as compared with about 1,400 r.p.m. at the Alpha Mills.

It is easier to adjust the tension on the winder with the overend delivery than it is on the frame with the "side" spindle delivery. It is also easier to take off the empty bobbin and put on a full one as there are no bobbin weights to bother with.

Instead of a winder hand running five spindles on one kind of yarn, five spindles on another kind, and ten spindles on a third kind, as you do, we run the entire winder on only one kind of yarn at a time. All of the yarn and filling is cleared away before starting another kind, so that mixed filling is held to a minimum. We run the yarn directly from the yarn boxes instead of stacking the yarn out in troughs, as you do. The quilled filling is put in filling boxes on a shelf located *under* the spindles, instead of *over* the top tensions, as you do at the Alpha Mills.

Another point for comparison is that the filling winder is oiled, by the operative, once each shift, although, like your machines, they have a form of oilless bearing. As I recall, we never put any oil in these bearings at the Alpha Mills although there were oil holes provided by the manufacturer. We always

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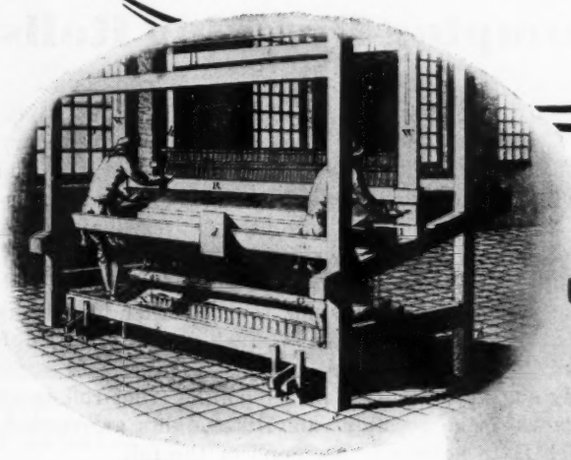
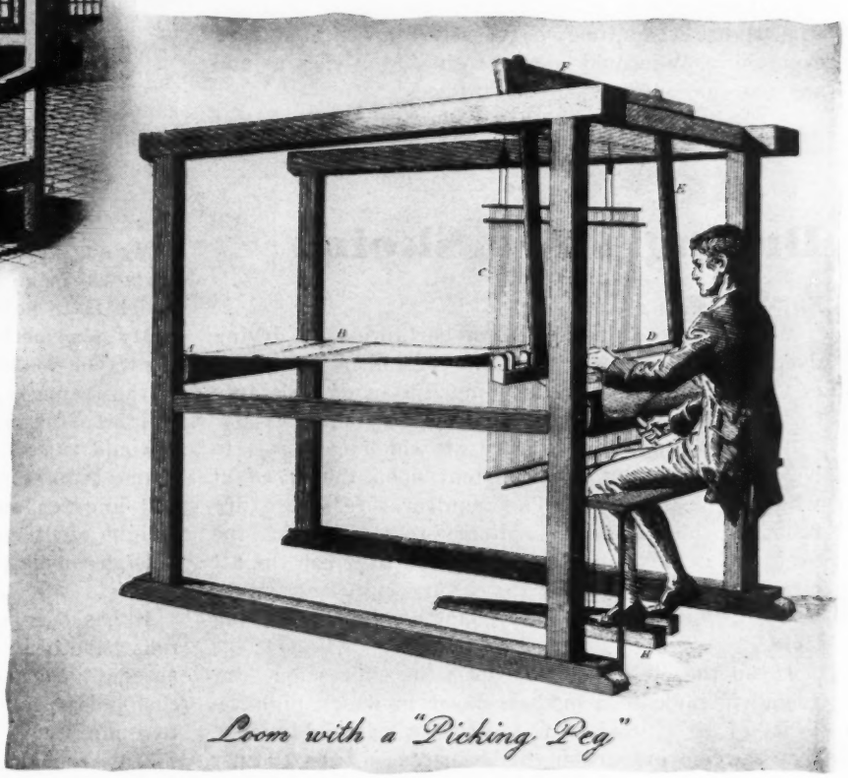
This is the fifth in a series of letters from "John", who recently left "Alpha" mill to take his first overseer's job in "Beta" mill, in another state. He is writing back home to "Frank". The first letter appeared on page 81 of the November 1941 issue, the second on page 96 of the January 1942 issue; the third on page 72 of the March 1942 issue; and the fourth on page 93 of the April 1942 issue.—The Editor.

They Used to "Play Catch" with a Shuttle



For narrow fabrics a single operator threw the shuttle from his left hand to his right. For wider goods, two men threw it back and forth to each other.



Loom with a "Picking Peg"

IN 1738, John Kay put a stop to this game of catch with the invention of the "picking peg." This device threw the shuttle mechanically by means of a peg held in the weaver's hand, attached by strings to opposite ends of the lay. Its introduction increased loom productivity four-fold.

The "picking peg" was an early development that became typical of all textile progress—increased efficiency by making processes more *continuous*.

It seems like a far cry from John Kay to the "Continuous Process," Industrial's new method for producing rayon yarn, and yet it is the same story ever present in textile development—more *continuous* operation; less starting, stopping, changing and replacing. In one *continuous* thread, Spun-lo Rayon yarn is spun, washed, bleached, treated, dried and twisted. As a result, it is more uniform in strength, lustre and denier and is virtually free from knots and broken filaments.

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thought that to put oil in an oilless bearing would cause the spindles to stick. I visited this manufacturer's booth at the Textile Exposition last year, and noticed particularly that their new machines had the oilless bearings and also the oil holes, so I questioned the salesman on this point and he admitted that these bearings needed a little oil occasionally, thus the oil holes were provided. The fact that you have had trouble with your bearings becoming worn, throwing your spindles out of line and stripping the gears, on one type of winder, may be attributed to the fact that you do not oil the winders.

There are doubtless many other points of comparison in methods, machinery settings and procedure in the various departments of the mill, with which I am not familiar at the present time, but which might form the basis of additional letters to you later on, when I have had time to get better acquainted with everything. We would be glad to have you visit us and see for yourself how we do things.

Sincerely yours,
JOHN

Drying Dyed Skeins

EDITOR COTTON:

We have noted the question pertaining to drying dyed skeins on page 110 of the November 1941 issue of COTTON, and we want very much to be of assistance to this man, but his problem is not so simple.

The maximum temperature at which cotton is to be dried depends to some extent upon the speed at which it can be dried. The inquirer refers to a dry room. If this means an ordinary room in which the skeins of cotton hang for drying and in which the air circulation is only moderate, a very low temperature would have to be used on account of the long drying time.

If, on the other hand, he uses the expression "dry room" to indicate a modern dryer in which high velocity of air is used so as to dry the material quickly, then the temperature might be increased even 100 per cent and produce yarn equal to the condition mentioned previously.

The question cannot possibly be answered in a way to be of any value without some knowledge of the other factors such as are indicated.

In a modern type of dryer any wet and dry bulb combination which would give a rapid drying would carry the yarn far below 8 per cent moisture so that after all there are two problems: one of quick drying and one of artificial conditioning.

There are wet and dry bulb temperatures for conditioning which can be so determined as to bring skeins of cotton from a conveyor dryer at a moisture content of 8 per cent plus or minus 1 per cent. However, these are close limits and such a conditioning unit would be rather long. If the moisture content could be plus or minus 2 per cent a conditioner of this sort would be greatly shortened.

Fortunately, the question which this man has asked can be determined experimentally, and if the inquirer is interested in a very specific case, not requiring an unreasonable amount of research work, we would propose to determine the questions which he raised experimentally.

If this man wishes to come to our plant we will take him to our laboratory and arrive at something definite, which we believe could be determined on a single type of yarn in a comparatively short time, but we see no other way to get a specific answer of any value to this question.

CONTRIBUTOR NO. 7327

Jumping Drawing Rolls

EDITOR COTTON:

I am answering the question of "CONTRIBUTOR NO. 7315", which appeared on page 102 of the January 1942 issue of COTTON. He is having trouble with the front rolls on his drawing frames jumping and causing cut drawing sliver. The rolls are covered with cork, running 400 r.p.m. and weighted 36 pounds.

This man has excessive front roll speed (400 r.p.m.); however, I presume that in order to get the amount of pounds through he must maintain this high speed.

My suggestion is that he reduce the front roll speed as much as he possibly can. His weights are correct, which is 18 pounds to each end of the roll.

My own method in handling this problem is as follows: On week-ends, release all weight on top rolls. If the frame is equipped with roll weight lifters, take weight off front rolls by unhooking front roll hooks. I would raise or release weight on these rolls if the frame is to stand for as long as one hour, because the roll idle for any length of time with 36 pounds of weight on it will certainly flatten it to some extent, enough anyway to start some of the front rolls to jump.

It has been my experience that after cork covered rolls have been run for an unduly long time they will become hard and they will not have the cushion; this cushionless roll buffed down thin will cause the roll to jump.

Any roll that jumps while running in drawing frames is not perfectly round. It may have one end larger than the other, or if varnished it might be that the varnish is not applied properly and evenly. If too much varnish is applied it will dry thicker in one place than another. The roll must be picked up from the varnish board while it is still rolling, because if it is stopped and then picked up there will be a ridge left on it, which will dry and then bump in the frame. This behaves very much like a shoe will in the auto tire of it is not put in properly.

When putting in new rolls in any type of drafting machine, I always use the new rolls in the front line and the ones removed from the front lines are buffed and then used in the back lines of the frame.

If "CONTRIBUTOR NO. 7315" will take out the next roll that he finds jumping and caliper it, he will find that it is out of roundness. When this is discovered, take the same roll to the buffing machine, put a new surface on it, and if the roll has any cushion at all left, he will find this to be his trouble.

CONTRIBUTOR NO. 7317

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103. GRADING RULES AND COMPLETE SPECIFICATIONS FOR LAYING AND FINISHING MAPLE FLOORS.—MAPLE FLOORING MANUFACTURERS' ASSOCIATION, Chicago, Ill.

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107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. RIHCO TYPE B HUMIDIFIER HEADS—Bulletin describes new atomizers with construction lessening air consumption. — ALDRICH MACHINE WORKS, Greenwood, S. C.

109. CENTRAL STATION AIR CONDITIONING—Technical Bulletin 141 on this method of textile air conditioning by manufacturers of Parks Certified Climate equipment.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

111. SUPPLY, MAINTENANCE AND REGULATION OF HUMIDITY—General catalog of humidifying and air-conditioning devices including humidifiers, controls, atomizers, sprayers, etc.; also, lap weight indicators for picker room.—AMERICAN MOISTENING CO., Providence, R. I.

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205. SKF IN THE COTTON MILLS—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley.—SKF INDUSTRIES, INC., Philadelphia, Pa.

207. DAYTON COG BELT CATALOG—A 32 page booklet on power drives, arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired.—THE DAYTON RUBBER MFG. CO., Dept. C-11, Dayton, Ohio.

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219. LOOM MOTORS AND CONTROLS—Bulletin of polyphase enclosed motors and manual starting switch.—GENERAL ELECTRIC CO., Schenectady, New York.

222. NEEDLE AND BALL BEARINGS—Catalog 404 gives ball bearing data with data on selection of proper bearings; Catalog 22 outlines use of needle bearings, including textile uses, types, installation, lubrication and general data. Both issued by TORRINGTON CO., Torrington, Conn.

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408. THE BOWEN SPINNER'S RECORD BOOK—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data.—U. S. RING TRAVELER COMPANY, Providence, R. I.

409. ROTO-CONER — Bulletin describing the new No. 44 Universal Winder, known as the Roto-Coner for winding knitting yarns, which has many new and distinctive features. — UNIVERSAL WINDING COMPANY, Providence, R. I.

410. FIBRE CONDITIONING WITH TEXSPRAY COMPOUND—30 page booklet on treating of cotton or cut staple fibers with Texspray Compound including the advantages and development of fiber conditioning.—THE TEXAS CO., 135 E. 42nd St., New York City.

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419. TEXTILE APRONS—Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

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502. TEXTILE COUNTERS—Catalog T37 describing pick counters for looms, hank counters for spinning, yardage counters for cloth loom, etc.—VEEDER-ROOT, INC., Hartford, Conn.

Continued on Page 120

Continued from Page 119

503. HARNESS, HEDDLES AND REEDS—8 page illustrated booklet on steel heddles, harness frames, mail-eye harness, jacquard heddles, etc.—EMMONS LOOM HARNESS CO., Lawrence, Mass.

504. TEXTILE LEATHERS—Catalog of complete line of leather products for looms, condensers, gill boxes, combs. Including G & K "Hairitan."—GRATON & KNIGHT, Worcester, Mass.

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506. NOTES ON EXSIZE—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes.—PABST SALES COMPANY, Chicago, Ill.

508. SIZING AND FINISHING—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing.—STEIN, HALL & CO., INC., New York City.

509. ARCY—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. —DRAKE CORPORATION, Norfolk, Va.

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511. HOUGHTO-SIZE SR—Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost.—E. F. HOUGHTON & CO., Philadelphia, Pa.

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514. WEAVING DISEASES — THEIR CAUSES AND PREVENTIVES—Illustrated booklet on weaving of rayon fabrics.—INDUSTRIAL RAYON CORP., New York, N. Y.

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602. ALUMINUM IN THE CHEMICAL INDUSTRY—Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended usees.—ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

603. THE MORTON SYSTEM—Illustrated literature describing the Morton Improved double circulating raw stock dyeing and bleaching machine, the Morton horizontal revolving beam and package dyeing machine and beam bleaching machine, the Morton vertical package and roving dyeing machine.—MORTON MACHINE WORKS, Columbus, Ga.

604. THE NEW PROCTOR AUTOMATIC YARN DRYER—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector.—PROCTOR & SCHWARTZ, INC., Philadelphia, Pa.

605. BUTTERWORTH ELECTRIC GUIDERS—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider.—H. W. BUTTERWORTH & SONS CO., Philadelphia, Pennsylvania.

606. SLITTERS AND ROLL-WINDERS—8 page folder illustrating more than 25 types of slitters and roll-winders for textiles. Form CF-640.—CAMERON MACHINE CO., Brooklyn, N. Y.

607. GENERAL ELECTRIC EQUIPMENT FOR TENTERS—Folders including drive and control, guider equipment, welt-straightening controls—providing means of finishing cloth of uniform quality.—GENERAL ELECTRIC CO., Schenectady, N. Y.

608. "3 OR 5"—Series of Textile Dyeing folders on cutting operating costs with stainless steel equipment.—S. BLICKMAN, INC., Weehawken, N. J.

DYESTUFFS, CHEMICALS, SOAPS . . .

701. TEXTILE CHEMICALS—36 page booklet on uses and properties of chemical products.—ROHM & HAAS CO., Philadelphia, Pa.

702. TEXTILE PROCESSING WITH ARTIC SYNTEX M AND T—Application charts for these new materials giving formulae for processing of textiles according to fibers.—COLGATE-PALMOLIVE-PEET CO., Jersey City, New Jersey.

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706. RAYON OILS—Leaflet describing three Houghton products used for throwing rayon filling yarns for weaving, as softeners in gelatin and similar solutions used for sizing and as softening oils for yarns, knitted and woven fabrics.—E. F. HOUGHTON & CO., Philadelphia, Pa.

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709. CAUSTIC SODA BULLETIN—A data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas.—PENNSYLVANIA SALT MFG. CO., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

710. THE MAPRO SERIES—34 page book describing the use of detergents in general textile mill work.—ONYX OIL & CHEMICAL CO., Jersey City, New Jersey.

711. KEY PRODUCTS FOR TEXTILE INDUSTRY—22 page leaflet describing textile specialties used in dyeing, bleaching, and finishing as applied to Southern textile industry from Southern plants of AMERICAN CYANAMID & CHEMICAL CORP., Charlotte, N. C.

712. STANDARD SILICATE ALKALIES—Booklet on silicate of soda for kier boiling, bleaching, water treatment, etc., giving tables for specific gravity temperature correction, tank capacity.—STANDARD SILICATE DIV., Diamond Alkali Co., Pittsburgh, Pennsylvania.

713. LIOVATINE ER—Vat dyeing assistant increasing penetration and level dyeings with maximum yield of color.—SANDOZ CHEMICAL WORKS, New York City.

714. FUGITIVE TINTS—Information on water soluble, oil soluble, all types fugitive tints.—TINT SERVICE DIV., United States Testing Co., Hoboken, New Jersey.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletins on Aquarol, water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and rayon, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

729. ORGANIC CHEMICAL SPECIALTIES—BULLETIN IB—Covers various wetting, dispersing, scouring, emulsifying and foaming agents, most with surface active properties, used for wetting, cleaning and penetration.—FINE CHEMICALS DIVISION, E. I. DU PONT DE NEMOURS & COMPANY, Wilmington, Del.

730. PRINTS ON NAPHTHOL PREPARE—Shade card illustrating prints of salts and bases using Methocel as printing thickener.—CIBA CO., INC., New York City.

731. WET PROCESSING AGENTS FOR EVERY TEXTILE APPLICATION—Folder listing processing agents for hosiery and underwear, yarns and piece goods, woolens, etc.—BURKART-SCHIER CHEMICAL COMPANY, Chattanooga, Tenn.

732. A NEW FINISHING OIL—Folder on Warco 945-A finishing agent where softness is desired.—WARWICK CHEMICAL CO., West Warwick, R. I.

733. DYED COTTON TEXTILE ITEMS FOR WAR USE—No. 632. Government procurement agencies, specifications with equipment and procedure for dyeing and finishing cotton textiles for war use.—CALCO CHEMICAL DIV., AMERICAN CYANAMID CO., Bound Brook, N. J.

KNITTING . . .

801. THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

803. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste.—H. W. BUTTERWORTH & SONS CO., York and Cedar Sts., Philadelphia, Pa.

804. FULL-FASHIONED HOSIERY MANUFACTURE—Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery.—GULF OIL CORPORATION, Pittsburgh, Pennsylvania.

805. ELASTIC ATTACHING MACHINE—Form 885 on new three needle machine for attaching flat elastic with perfect stretch tension device and other features.—WILLCOX & GIBBS SEWING MACHINE CO., New York City.

806. DEPENDABLE FINISHING FOR MODERN ELASTIC TOP HOSIERY—Describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery.—UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

807. CIRCULAR KNITTING MACHINES—A fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex.—FIDELITY MACHINE COMPANY, Philadelphia, Pa.

809. TEXACO IN THE KNITTING INDUSTRY—Folder on knitting mill lubrication.—THE TEXAS CO., New York, N. Y.

SEWING MACHINES . . .

901. LOCKSTITCH MACHINE WITH AUTOMATIC LUBRICATION—Bulletin illustrating new unit for single needle stitching on wide variety of articles. Form 886.—WILLCOX & GIBBS SEWING MACHINE CO., 214 West 39th St., New York City.

902. SEWING MACHINES—Illustrated technical booklets on high speed lock-stitch sewing machines for all types of work.—SINGER SEWING MACHINE CO., New York City.

MATERIALS HANDLING . . .

1001. HOW TO DETERMINE WHERE OVERHEAD MATERIALS HANDLING EQUIPMENT CAN BE USED PROFITABLY—Illustrated folder including elements of materials handling system, preparation of simple layout.—CLEVELAND TRAMRAIL DIVISION, Wickliffe, O.

1002. CATALOG NO. 22—An attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. —MEESE, INC., Madison, Ind.

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach, Calif.

1006. LANE CANVAS BASKETS—16 page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. HOW HANDLING PROBLEMS HAVE BEEN SOLVED—A 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes.—AMERICAN MONORAIL COMPANY, Cleveland, Ohio.

1010. PLATFORM AND SPECIAL TRUCKS—Mill trucks and fibre cars for all textile plant and warehouse uses—50 page illustrated catalog.—THE FAIRBANKS COMPANY, New York City.

1012. DANDUX CANVAS BASKETS—Catalog illustrating and describing "DANDUX" line of Baskets, Hampers and Trucks for the Textile Industry and general use.—C. R. DANIELS, INC., Newark, New Jersey.

MISCELLANEOUS . . .

1101. UNBRAKO SELF-LOCKING HOLLOW SET SCREW—Bulletin Form 532 includes illustration and descriptive matter of this latest improvement in socket and screws. This bulletin also features the complete line of "Unbrako" Socket Screws.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1102. REPAIR PARTS FOR TEXTILE MACHINERY—36 page booklet and catalog on replacement parts for opening, picking, carding, spinning and twisting machinery.—HENDERSON FOUNDRY & MACHINE CO., Hampton, Ga.

COTTON, Grant Bldg., Atlanta, Ga.

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Scott & Williams, Inc., has designed much of its manufacturing equipment specially for its own particular needs; and seventy-six years of experience with materials have resulted in discovery of special sources of supply, special material formulae and special methods of heat-treating. It is, therefore, practically impossible for any other plant to make *exact* duplicates of S & W knitting machine parts.

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We are endeavoring to keep most of the 55,400 S & W standard part replacements available for prompt shipment on receipt of your order. However, due to the national emergency, we suggest that you keep on hand at least a minimum stock of more likely part replacements. Teletype service is FREE from our High Point and New York Offices.

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"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

A Mill Man's Analysis of Hosiery Machine Operators

By Earl Roberts

IN ANY TYPE of industry there are operators that are both above the average and below the average, and the full-fashioned hosiery machine operators are no exception. However, classifying them as just good or bad does not suffice because there is a wide range between these two classifications into which the majority of the operatives will fall.

By far the greatest number of operators come under the general classification of "average". These men are the plugging type who keep their machines in fairly good condition and can be depended upon to get a normal production of goods. A knitter in this class may have operated a machine for quite a number of years yet never have improved beyond a point where there is much difference between him and any other ordinary operator. Let it be said here, that this type of employee is essential in any plant, and perhaps it is just as well that this class of operator predominates because as a rule he is a good employee and obeys orders without uncalled for squawking or bickering.

Just as an insight of one who has worked in mills all over the country and who has observed many hosiery machine operators, we will look into the various characteristics of the types of machine operators that we have in our mills today.

"Average Plus" Operators

We shall call the first of these operators "average plus". This is the man who, most likely superior in skill, does not possess enough knowledge to be considered efficient in all of the details that might make him a good operator. He understands machinery and has absorbed a bit more of what he has been taught than the average operator, and he learns from experience, but at the same time he finds it almost impossible to learn just that little additional bit more that would boost him out of the class of "in-betweens".

Inasmuch as there is not a surplus of exceptionally efficient men in any full-fashioned hosiery mill, this average-plus man is called upon to fill the shoes of a good operator who has resigned to accept a better job. Since this man is following a good operator the record he makes on his machine is not up to the standard of his predecessor, but he does make a passable record if he has any ambition whatsoever. And, if he does have ambition, it requires every ounce of initiative in his body to prove to his superiors that he is "making the grade" in his new position. If this type of man should fail when opportunity has placed him on the job, the chances are it will require a long time for him to regain his self-confidence so that he can again be considered for promotion.

THE WASTREL

". . . type of fellow who will unravel a hose beyond the point where it is defective."

Let us look for a moment at the "good operator". He is the man that we can depend upon, that is seldom unreasonable, that knows his place, and that takes great pride in the appearance and condition of his machines. He does his work religiously and hosiery mill executives always wish that there were more men like him. He is few and far between.

The Good Operator

The fact that this good operator may be termed a bit temperamental does not take him out of the class into which we have put him; the fact that he is temperamental only requires a more tactful supervisor, which really throws the responsibility into the lap of the mill official, who should recognize that all persons are different in their characteristics, and should drill this point into their supervisors.

Into this class of good operators might also be placed the type of man who is easy-going and nerveless, the type that never permits a break-down to ruffle his composure. Naturally, of the two types, the temperamental or the nerveless, the latter is the most preferable. Such an operative usually does less manual work than any other operator in the mill, yet produces and keeps his machines up to perfection.

Day in and day out these good operators run their machines with a minimum of trouble and a maximum of production. Why is this? It is not perhaps because they are college graduates or have had more schooling than their fellow operators, but it is because they are perfect "naturals" for the job they are running. We have all seen men of this type, whether it

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be that they are horse-back riders, golfers, or highly-skilled mechanics, and when the executives of a hosiery mill find such a man they make every effort to retain him.

These operators who are "naturals" on their job have intelligence enough to realize their own limitations and to let the fixer make such adjustments on the machine that are necessary to eliminate bad work. Narrowing and picot holes are eliminated under the skilled guidance of their own pliers and they have the least amount of press-offs, but when the mechanical workings of the machine are at fault, they leave the work to the fixer. In the case of press-offs the good operator realizes that something caused the yarn to break, and he will try to trace it because he well knows that if something caused the yarn to break the first time it will break again.

This man's welts turn easily because his needles and hooks are in line; he thoroughly understands the spacing and lining of such parts, knowing full well that unless he exercises extra care when replacing broken members that he more than offsets what might be gained by a hasty "patch-up".

The good operator is an asset to any mill and it is not by chance that he usually gets what others might term "the breaks" by being advanced to better paying jobs.

Average Minus

We now come to the operator that we shall class as "average minus". He is the fellow that cannot rightfully be placed in the classification as "bad", because he does have his good moments, even though they are fairly spasmodic. This man struggles along quite hopelessly every day of his life to achieve an average rating, but he never will, for the simple reason that he missed his calling and probably would have been more of a success following a horse and plow. Perhaps he never gets into the "bad" class, but at the same time he is unreliable and his supervisors never know what he might do next. Undoubtedly, he is a hard worker; as a matter of fact, he probably works much harder than the other operators, but he always seems to do the right thing at the wrong time, which is one way of saying that he is undependable. Furthermore, he probably does not learn from experience and he invariably repeats previous mistakes.

The Bad Operator

Another class that we have is the bad operator and it does not take us long to discover him. He is the type of man that will never be able to run a knitting machine, no matter how long he spends in the mill. Obviously, he is forgetting what he learns faster than he can absorb it. His machine is always in a mess and he rarely lasts very long unless his supervisor is blessed with perseverance. The operation of a full-fashioned hosiery machine is simply beyond

AVERAGE MINUS

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his scope and power of understanding. He is very definitely a detriment to the mill. If this type of person is retained on the machine he is very likely to be the cause of much grief to everyone concerned, including the other employees.

Now that we have made several classifications of full-fashioned operatives, we shall segregate a few and take them apart.

Helpless Operator

The helpless operator is one that has been in the mill a sufficiently long time to learn what it is all about but still cannot grasp the principles of knitting. Time and again the fixer explains patiently to him how to fix the different small troubles on his machine, but it is simply a waste of time because just as soon as his machine has the same trouble he runs for the fixer instead of performing the small task himself. Narrowing and picot holes are a mystery to him and when he does attempt to fix them it is quite possible that he makes conditions worse by pliering parts in, out, or to one side and thereby aggravating the trouble. The only thing that holds him up is the fact that he has a good partner on the opposite shift who keeps the machine in running order. This helpless operator is one that requires 15 minutes to fix something that normally should require five. Such a man does not retain his job on his merits but simply because the management has spent so much time trying to teach him that they hope eventually he will turn out all right and they hate to let him go because of the investment in him.

The Wastrel

Another type of operator that is the bane of a mill's existence is the wastrel. His type is probably more numerous than the "helpless" operator, and he is sometimes as big a problem. Although he makes production he has a tendency to waste material at every opportunity, either brazenly in the open or on the sly. He is the type of fellow who will unravel a hose beyond the point where it is defective, and will also run useless welts all the way to the heel, fully understanding all the time that the finished stocking is a total loss. He peels off five times as much silk from a new cone as is necessary—but if caught in any of his practices he has some sort of cock-and-bull story ready to hand out as an alibi.

To him the straightening of a needle is a job that requires too much of his valuable time. He throws it in the floor, stamps on it, throws away welt hooks and points and forgets that there is an item of cost in operating a knitting mill.

This kind of fellow has a bad influence on the other well-meaning operators who are trying to do

their job, but who see this man "getting away with it", and the temptation naturally is for them to absorb some of his bad habits. We all know that it is much easier to take up a bad habit than a good one.

The Fixer Complex

There is one classification of operative that is a constant source of grief to the mill and this is the type of fellow who has the "fixer complex". He believes that he should fix any and everything that he sees on a machine whether it needs it or not. Perhaps a long time ago he saw somebody do something and not knowing what it was, he feels that he must do the same thing for no reason at all. He is not supposed to carry wrenches in his pocket, but he does, and takes them home at night so that they will not be discovered.

He is the type of fellow that believes all fixers require too long to fix a machine and that he can adjust the machine just as easy as the fixer can and in one-third the length of time. He is the type of fellow that gets a knitting machine in such shape that some very expensive work must be done on it before it is put into operation again.

The Belligerent

The belligerent type of operative is the one that is always ready for an argument with any person who will stand and argue, even the owner of the mill. To him nothing is right. No matter what the order is it should have been different. You tell him to do something at ten o'clock and he'll wonder why in the world it can't be done at eleven o'clock. He has carrier tubes that need replacing early in the morning but he runs his machine until noon and then flies into a tantrum when he finds that the fixer has more important work to do during the shut-down hour. It never occurs to him that he is not the only one working in the mill.

When things go wrong it is not his fault, but the fault of the fixer, the people who made the machine or the type of lubricant that is being used; this man cannot understand why black is not white and he'll argue the horns off of a billygoat because he's "had ten years of experience", and he argues with everybody until he finally talks himself right out of the mill—which is where he belongs.

The Sloppy Operator

Another type of operator is one we shall class as "sloppy". This man always has an untidy work box and tries to get out of as much cleaning as possible. He hands in

FIXER COMPLEX

". . . he can adjust the machine just as easy as the fixer can and in one-third time."

bad work if he can get away with it successfully. A few lessons in cleaning his machine with a loss of some dozens will help to overcome a part of this man's deficiency and a rigid inspection of the work he hands in and a penalty for all bad hose will probably cure the rest of it.

The last classification that we shall study is the type that all mills have at one time or another.

The Drifter

The "drifter" is the type of person that no one knows just how to take until after he is hired. He may be skilled enough to hold down his job, but after he works for awhile he is off in another direction. Usually, if his machine is inspected after he leaves, it will be found that this man does not take quite as good care of it as his supervisor had thought he was doing. He never gives the mill notice that he is leaving, so it is always necessary to fill a vacancy immediately.

These are the general classifications of hosiery mill operatives as the writer sees them. *If readers of this article take offence at what has been said, the writer would be interested in knowing under which classification you place yourself.*

◆

New Building for Robert Reiner, Inc.

A new building necessitated by the company's expanding work on war material is to be erected by Robert Reiner, Inc., Weehawken, N. J., manufacturers of knitting and high speed warping equipment and other textile machinery. The new structure, to adjoin the present plant, will be 75x175 feet, two stories, with approximately 40,000 square feet of floor space.

At the present time, the company is engaged approximately 90 per cent on the production of war material, it was stated by Dr. Robert Reiner, president. The conversion of the firm's productive effort from the manufacture of textile machines to the output of material for the war effort has called for practically a complete revamping of the company's machine shop. Fritz Lambach, chief engineer and general manager, is directing the defense work, assisted by Robert Reiner, Jr. Emil Nufer is in charge of the embroidery machine division, and August Schoenenberg is sales manager of the high speed warping equipment and knitting division. Although primarily concerned with its war work, the company will continue to provide parts for its textile machinery, and the usual servicing of machines is being maintained, it is announced.

◆

Converts Textile Plant to War Production

Conversion of a long-idle textile processing plant in Sunbury, Pa., to manufacture bulkier types of communication facilities for the government has been announced by Walter C. Evans, general manager of Westinghouse's broadcasting, radio and X-ray divisions. The plant was formerly used by the Sunbury Converting Works for printing patterns on silk cloth. Rehabilitating and equipping were begun in March with manufacturing operations starting in April.

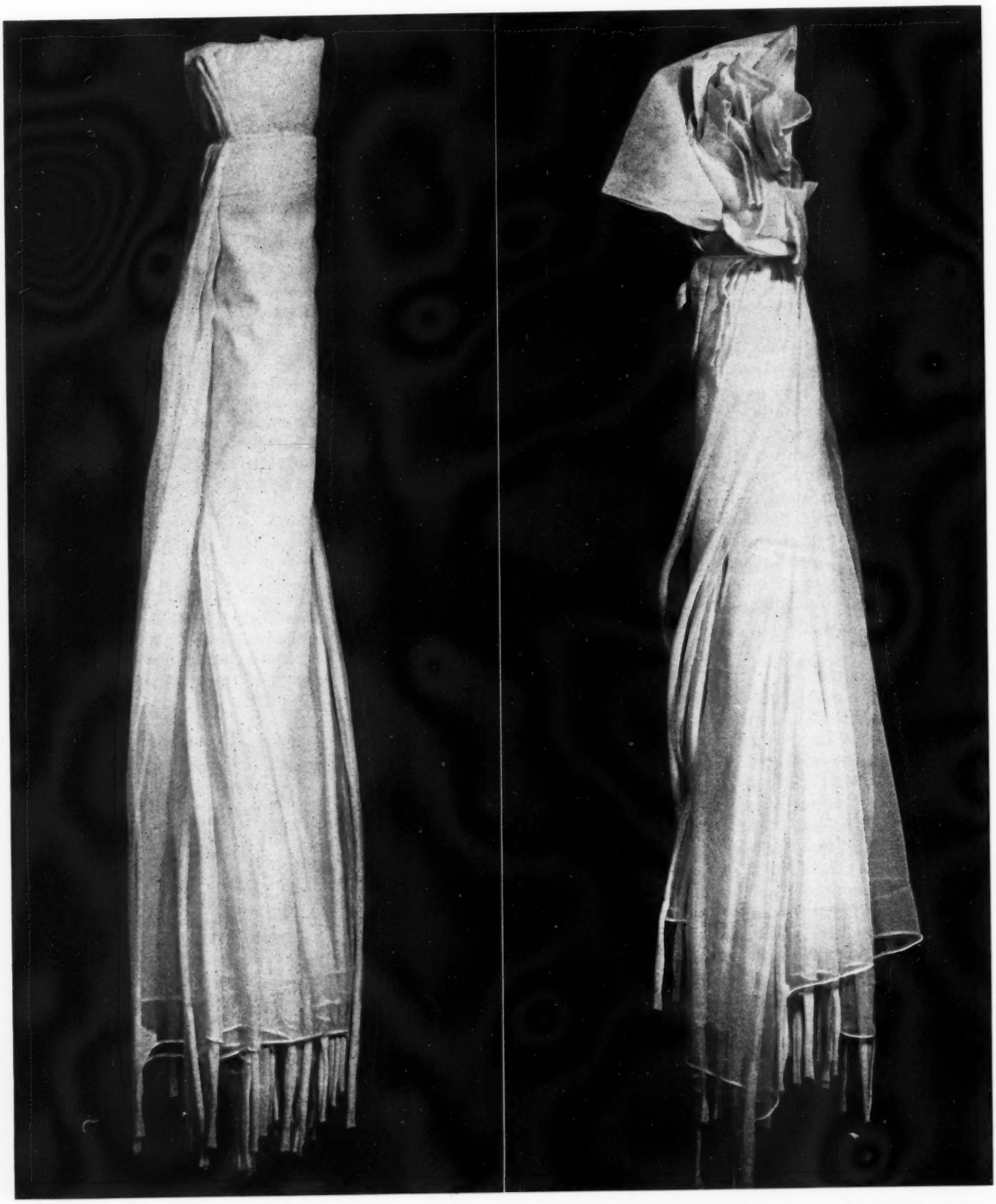
◆

Pepperell Foremen's Club in April Meeting

The Foremen's Club of the Pepperell Mfg. Company, Biddeford, Maine, at its regular monthly meeting on April 11, viewed the sound moving picture "We Work for Victory and We Plan for Peace", prepared and released by the Allis-Chalmers Mfg. Company.

Knitter Hints (No. 8)

Which Dozen Did You Tie?



Photos by John C. Fonville of "Cotton"

KNITTING KINKS

Benefits of Humidity Control

EDITOR COTTON:

May I submit my opinions based on experiment and practice, regarding the question submitted by "CONTRIBUTOR NO. 7341" as to the effect of temperature and relative humidity on circular or seamless knitting, and why the control of these elements is not as generally practiced in circular mills as in full-fashioned mills?

The query as submitted has three distinct topics so I will segregate them as follows: 1, temperature; 2, relative humidity; 3, why control of these elements is not practiced more generally in circular mills—and discuss these in order.

1. The degree of temperature best suited for a seamless knitting mill depends mainly upon the climate of the mill's location, as it is necessary to maintain a *uniform* temperature that is suitable for the comfort and well-being of the employees. The only way temperature will affect the operation is by variation. The mechanism of knitting machines, like that of any other kind of complicated equipment, is constructed from several types of metals and the consistency of these metals is such as to make them very susceptible to variations in temperature. Therefore, if the temperature in the building in which the knitting machines are housed is allowed to change to any appreciable degree, say for a week-end shut-down, it is advisable to bring the temperature back to normal at least six hours before operation of the equipment is resumed. It does not require many "seconds" and broken machine parts, or needles at 4 to 6 cents each, to offset the saving made by not using a few pounds of coal.

2. The next topic is the question of relative humidity. This recalls memories of an interesting experiment in which I participated several years ago before the importance of proper humidification was as well recognized as it is today. At that time I was connected with a plant which operated about 200 Banner split-foot machines making pure thread silk hose, and about 200 Scott & Williams machines on merino wool construction. This mill was located near a river in a small southern city. We had been operating the plant only one 10-hour shift daily, but business conditions made it necessary to increase operations to two shifts of 10 hours each, day and night.

We started the night shift in the latter part of May, and within two months the weekly production of the night shift exceeded that of the day shift by about 15 per cent, and the percentage of bad work was less on the goods knit at night, although our more skilled operators were on the day shift. This difference in results from the two shifts caused quite a few headaches among the executives and investigations were put under way to determine the cause for this difference.

After careful study of conditions on both shifts we found the machines ran much better on the second shift, required less fixing, and that yarns which gave considerable trouble in the knitting operation on the day shift ran *much better at night*. This fact regarding the yarns was the "tip-off" which led to the solution of our problem.

As stated, the plant was located near a river in a small southern city and during that particular season of the year the temperature was in the 90s daily. Naturally all doors and windows were open, and it was decided that the change in atmosphere conditions after sundown, due to the nearness of the river, was affecting the conditioning of the yarns. The manager of the plant, who was a textile school graduate and one of the best knitters I have ever known, purchased a sling psychrometer and conducted tests to determine the difference in the relative humidity in the plant at all hours, day and night. The results of these tests showed a variation of several degrees. A system of humidification was installed and improvement of the day-shift production was immediately noticeable.

Most yarn manufacturers and processors of hosiery yarns today are practicing yarn conditioning methods which provide knitting mills with yarns that are best suited for their particular purpose, but proper humidification is necessary in the knitting mills themselves to maintain this conditioning until the yarn is knit into the fabric. Many a time I have seen knitting managers complain to the yarn processors about yarns giving trouble in the knitting operation when these same yarns were stored in a hot, dry warehouse for several weeks after being received, then delivered to the machines for knitting without any steps having been taken to provide the proper moisture "regain" which they should have to bring them up to normal or previous conditioning.

3. The last topic in your contributor's question as to why control of temperature and relative humidity is not practiced in circular mills more generally is difficult to explain. The most obvious explanation is that the mill owners and operators do not fully realize the value of having some method of controlling the relative humidity in their plants, otherwise the practice of humidification would be much more universal than it is at present in seamless hosiery mills.

CONTRIBUTOR NO. 7363

Waste Control Bonus

EDITOR COTTON:

Discussion of whether an hourly pay rate plus a bonus would be more efficient in controlling seconds, thirds and waste in a seamless mill than the piecework system was requested in a letter from "CONTRIBUTOR NO. 7343" on page 121 of the March issue of

COTTON, and I would like to discuss it.

I think an hourly pay rate plus a bonus for maintaining a consistent production and good work would be more efficient than a straight piece rate. And during rush seasons, with the production sold well ahead, I would suggest an additional bonus for the amount produced in excess of the allotted task.

From the management point of view, the soundest method of docking knitters is not to pay anything for seconds, thirds and waste. Inasmuch as the mill can usually dispose of seconds, thirds and waste for a comparatively small sum, most knitters feel that they are entitled to a proportionately lower unit rate for such imperfect work, or that they be allowed a small percentage of bad work.

In our state it is not legal to dock employees for bad work they pass. So, when such operatives as clippers, loopers, back seamers and grey goods inspectors get careless, the only thing we can do is get in behind them and be fair and diplomatic and trust to the Lord that they will mend their ways.

In the dyehouse and boarding room, bad colors can be dyed over by the responsible party, if it doesn't happen too often; and careless boarding can be reboarded by the derelict. The same is true of the pairing and folding operations. However, the best policy is to consider a small percentage of bad work and waste as normal, and get rid of the careless people.

CONTRIBUTOR No. 7366

Gore Cutting on Wrap Machines

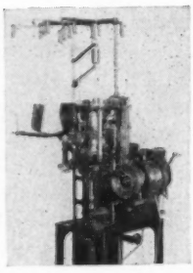
EDITOR COTTON:

I have some trouble on my 240-needle Banner wrap machines cutting holes in the gore. I know the importance of having the cams even to make an even stitch; and I know if I had a properly conditioned heel yarn I would not have this trouble; but it costs more. There is an oil bottle with a wick for the yarn to run over on the machine, but common oil does no good. Is there an oil or some solution to go in these bottles that will properly condition this yarn to eliminate these cuts in the gore? I would appreciate suggestions from any of your readers on how to eliminate this trouble.

CONTRIBUTOR No. 7347

The Komet Machine

Article 15



The Rib Stitch Cam Section (Continued)

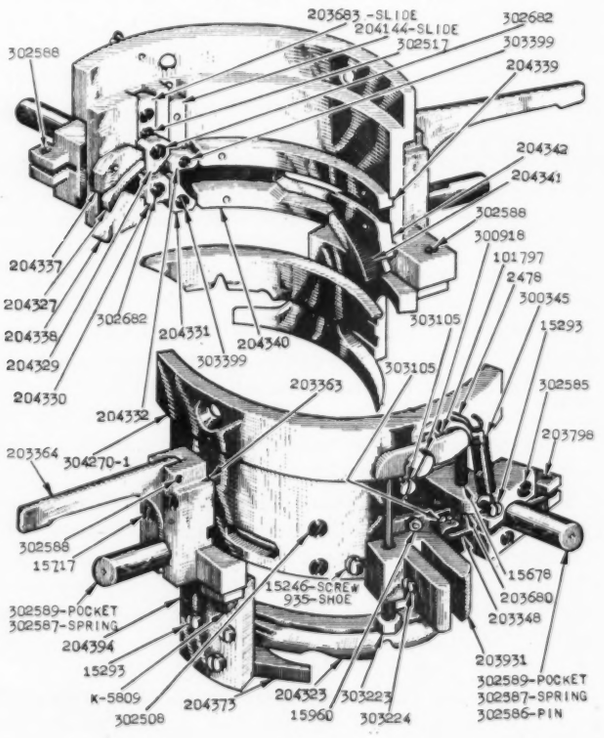
SHOWN HEREWITH are two views of the rib stitch cam section for a 4-inch, 24-gauge Komet. These are reproductions of Plate 23-G in the Komet and Links-and-Links Catalog of Parts. In the previous article in this series (page 160, April issue) we discussed the lower and upper front latch guards. Now we shall consider the remaining parts of this section.

The Heel Bolt Bracket Assembly

This assembly includes the following parts: heel bolt cam bracket (203363), bracket lever (203364), lever pivot screw (302588), pocket (302589), spring (302587) and heel bolt cam (204341). The heel bolt cam (204341) is moved in and out by the lever (203364) and spring (302587), the lever receiving its motion from a rod which in turn is raised and lowered by stepped cams located on the quality drum. The heel bolt cam has three working positions: fully in, half-way out, and fully out. The purpose of the heel bolt is twofold; it raises the sliders upward from the lower level to the upper, and by this action casts the rib stitches made by the auxiliary rib feed off the latches, thus making ready to knit on the regular rib stitch cam. The heel bolt also renders knitting in the upper cylinder inactive while the heels and toes are being made. The heel bolt cam remains fully in during the entire cycle of knitting one complete sock except while the heel and toe

PLATE 23-G KOMET

RIB STITCH CAM SECTION FOR A 4" - 24 GAUGE KOMET MACHINE WITH OR WITHOUT REVERSE WELT



AMERICAN YARNS

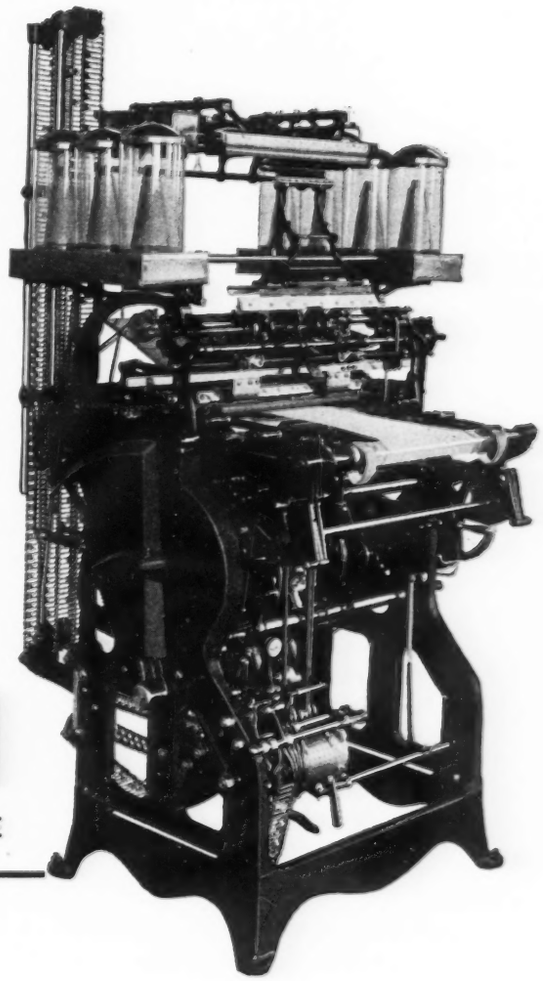
—have a Special Point for Hosiery Manufacturers Today

STOCKINGS

have gone "all out" for American yarns—nylons, rayons and cottons in fine gauges and combinations have captured the feminine heart.

These yarns might present production and matching difficulties to manufacturers who still operate with leggers and footers. But wherever there are Wildman Single-Head, Single-Unit, Full-Fashioned Hosiery Machines—the new trend is taken in stride. These machines handle any gauge or any combination, knitting the entire stocking in one continuous operation, perfect from top to toe. Wire, telephone or write for complete details.

WILDMAN MFG. CO., NORRISTOWN, PA.



WILDMAN

SINGLE-HEAD, SINGLE-UNIT, FULL-FASHIONED HOSIERY MACHINE

are being knit. During this time the heel bolt cam remains fully out. When the leg knitting is completed and the heel is begun, the heel bolt makes its first outward move. This is done in two steps. While the long butt sliders are passing up on the cam it moves halfway out, just far enough to clear the short butt sliders, while the short butt sliders are passing in front of the bolt cam it moves fully out to clear the long butt sliders. After the heel is completed and the foot knitting begins, the bolt cam moves halfway in while the short butt sliders are passing in front of the cam; then moves fully in while the long butt sliders are being raised upward by the bolt cam.

Heel Bolt Adjustment

The heel bolt rod assembly (302719-a-y—shown on Plate 41-a) is provided with an adjusting screw (302950) which operates against the under side of the heel bolt cam bracket lever (203364) permitting a very close adjustment. When this adjustment has been properly made, little trouble if any will come from the bolt cam insofar as its adjustment is concerned. Some fixers fail to check this setting occasionally and do not make allowances for ordinary wear on the bottom of the heel bolt rod where it rides over the cams on the quality drum. A small amount worn off the bottom of the rod will materially change the necessary amount of clearance between the bolt cam and the slider butts it should clear, enough to cause trouble to say the least. It is especially important to keep these *little* things in mind; soon after a new machine has been started and begins to limber up, failure here means trouble.

There is but one setting which is important insofar as the bolt cam adjustment is concerned and this is at the halfway point, either coming out or going in. Keep the bolt cam as near to the short butt sliders as possible without actually rubbing against them. Check this setting by stopping the machine at a point where the heel bolt rod is up on a front or rear step on the quality drum cam, turn by hand until the short butt sliders are in front of the bolt cam. The clearance between the face of the bolt cam and the short slider butts can be readily seen or measured with a thickness gauge, .010 to .015 is sufficient and will allow for ordinary wear on the bottom of the rod, if any.

Occasionally, the spring in the pocket will become weak or broken from constant compressing. These things cause little trouble and can be corrected in a few minutes.

It is only reasonable to expect that the bolt cam will become nicked at a point where the slider butts first come in contact with the cam when they begin their upward movement. Badly nicked cams will cause trouble. Re-polishing the bolt cam at regular intervals will not only prevent trouble but will lengthen the useful life of the cam.

Broken slider butts will at times become lodged behind the bolt cam and thus prevent the cam from moving fully out during heel or toe knitting. This will cause a machine to hang up or become stuck, since the machine cannot reciprocate with slider butts in the upper cam section races.

Occasionally we find a machine which will break off the last two or three long butt sliders in the upper cylinder when going onto the heel or toe. This can be caused by improper adjustment of the operating lever adjusting screw. Should this be the case, the bolt cam will be out too far at the halfway point which may cause it to move out too early when it begins to move fully out. In most cases this trouble is caused by faulty timing, due to the bolt cam moving fully out *before* all *long* butt sliders have been raised fully up by the bolt cam. Sometimes this particular trouble will develop when for some reason it becomes necessary to advance the quality drum, such as clutching trouble.

Also, this trouble may show up when we change patterns say, from 6x3 to 3x3 or vice versa. Someone may ask why should a change in pattern cause this kind of trouble. Simply because the total number of long butt sliders used in the upper cylinder varies according to set-ups and unfortunately if any are added it will be at the end of the long butts exactly where this butt breakage we are talking about occurs. Boiled down, the cause and remedy for this kind of trouble is incorrect and correct timing. In extreme cases we have found it helpful to polish off the step on the quality drum cam about 1/32-inch, thus changing the slope of the step slightly so it will permit the quality finger which rides on the drum cam to rise later and give all long butt sliders sufficient time to get past the bolt cam *before* it moves fully out. This latter procedure is the exception and not the rule, and should be used only as a last resort.

The Rib Stitch Cam

The rib stitch cam (204331) is attached to the slide (204144); immediately above the stitch cam we find the guard cam (204332). The rib stitch cam (like all other stitch cams on Komets) is of a different design from the stitch cams used on other types of seamless hosiery machines in that it does not come to a point where the hollowed portion terminates. This in our opinion does away with needle vibration at the knitting point since the sliders continue to move up until the stitch has been fully drawn, then moves straight across the flat portion of the stitch cam. The guard cam (204332) also provides additional control of the slider butts at the knitting point since these cams are closely fitted with just enough clearance between the guard cam and stitch cam to permit passage of the slider butts without binding.

It is a well known fact that Komets produce excellent fabric uniformly knit and free from vertical lines common to other types of machines. Stitch cam design is no doubt a contributing factor to this result. If broad rib stitches should become wavy or if it should become difficult to balance both broad rib feeds, check the stitch cams; they may be loose on the slide.

Slider butts becoming jammed in the races may cause the shoulders of the stitch cam to be broken so the cam will not set in a vertical position on the slide. This also will cause uneven or wavy rib knitting.

U. S. Navy "E" Insignia (twice size) awarded employees of Textile Machine Works for outstanding production of Naval Ordnance materials.

Come to our stocking shower . . . Every woman knows that the flattering sheerness of the fabric is what makes stockings a favored gift. Every hosiery manufacturer knows that regardless of the fibre used a fabric can only be as good as the needles will produce. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

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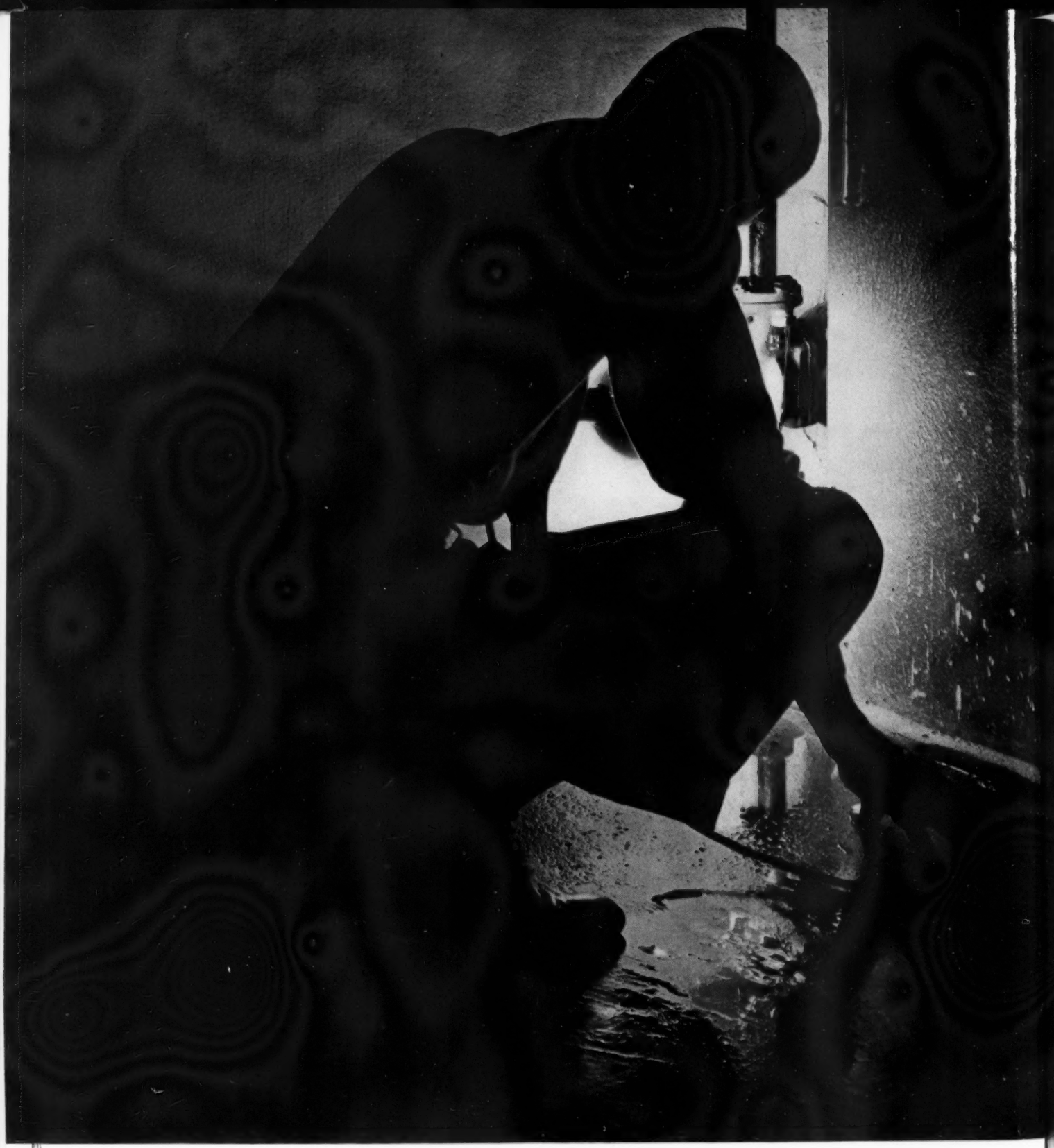


U. S. Navy Ordnance Flag and "E" Pennant awarded Textile Machine Works for outstanding production of Naval Ordnance materials.

"Happy the man who has been able to learn the cause of things."

VIRGIL

Until the Victory is Won! . . . The makers of Reading Full-Fashioned Knitting Machines are now 100 per cent on Ordnance production. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at the point of highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

In fitting up a new rib stitch cam, make sure that the back of the cam does not bind against the section so as to prevent free up-and-down movement of the stitch cam slide. Bear in mind that the rib stitch cam slide will move up only a certain distance; the degree of *loose* rib knitting is therefore limited. It is a good policy when sizing up to test the rib stitch cam slide and make sure that it does not bind, especially if it has become necessary to loosen the rib stitch excessively. Binding at this point will cause the rib stitch adjusting screw to hang on the rib stitch adjusting cam, and prevent the slide from coming down after broad rib knitting is completed to its proper place for 1x1 knitting. When this occurs the 1x1 top will be knit extremely loose.

Rib stitch cams stand up well and require no attention other than re-polishing. This should not be put off until the fixer finds time to do it one of these days when he has nothing else to do. Rather it should be done as soon and as often as small nicks show up. Doing this little job regularly will not only increase the useful life of the stitch cam, but will also help to prevent trouble as well. Small nicks or rough places will eventually cause broken or damaged slider butts. Play safe and keep them out.

Adjoining the rib stitch cam slide (204144) we see the cam slide (203683). This slide has no direct bearing on knitting or stitch formation since it is located behind the stitch cam and knitting has been completed before the sliders reach this slide. It does, however, have something to do with slider butt movement immediately after the sliders leave the stitch cam. We have heard much discussion about this slide (203683) and its cams (204329 and 204330) among Komet fixers, and no one seems to know just what this slide and its cams are for, the writer included. However, we have learned a few things in regard to its adjustment which may be helpful.

First of all, bear in mind that this slide works in harmony with, and its movement is controlled directly by, the stitch cam slide. When the stitch cam slide is raised or lowered slide (203683) moves about the same distance but in the *opposite* direction. Therefore, if it becomes necessary to loosen the broad rib stitch excessively for any reason, the adjusting screw (303223) should also be re-set so that the relative position of both sides will not be changed.

If there is any doubt as to the proper position of the cam slide (203683) in relation to the stitch cam slide (204144), we offer the following:

Run the machine into 1x1 top knitting. At this position, the cam slide (203683) should be fully up or at least high enough so the slider butts will leave the rib stitch cam and pass between the guard cam (204329) and (204330) at the *same* level at which they leave the stitch cam. Next run the machine through the double transfer and stop in the leg. The rib stitch cam adjusting bar will have raised the stitch cam slide up for broad rib knitting. This upward movement will cause the slide (203683) to go down; how far it goes down will depend on the position of the adjusting screw (303223). With the machine in the leg knitting position, set the adjusting screw (303223) so the *top* of the cam slide operating block (203680) will be no less than 1/32-inch or no more than 1/16-inch from the top of the slot in the cam section.

Nothing is gained as far as broad rib knitting is concerned by driving the slider butts too far down after they leave the rib stitch cam. An excessive up-and-down movement of both slides at the start of broad rib knitting and when it is completed can cause broken slider butts.

We find that the setting described for cam slide (203683) works equally well on both 48-gauge and 24-gauge plain and Links-and-Links machines.

Before we take up the remaining parts of the rib stitch cam section, may we remind Komet fixers of one thing which they *all* know but which few do anything about until trouble compels them to, and that is keeping the races free of broken butts or foreign matter of any kind. There are many reasons why any machine will break a few butts now and then—call them all the machine's fault if you like. Sometimes these minor troubles are hard to find and to correct, but when a machine fixer *knows* butts have been broken and is too lazy to remove the section and clean it thoroughly, he should not blame his machine when it breaks half the butts in the cylinder.

The Clearing Cam Bracket Assembly

Part of the clearing cam bracket assembly can be seen in both reproductions herewith. The upper reproduction shows part of the clearing cam bracket and the clearing cam; the lower one shows the complete bracket in place on the cam section. The clearing cam (204327) lowers all sliders and needles after broad rib knitting has been done on the regular feed and remains in action during the entire cycle of knitting one complete sock except for a few courses where the welt is being made.

Motion to move the clearing cam when necessary is supplied by lever (203348) and cable action. These parts in turn are actuated by cams on the quality drum.

As stated, the clearing cam remains fully in most of the time so we shall consider its cycle of movement from this point. The first move is made when the welt is begun. The clearing cam moves halfway out while long butt sliders are passing down the cam; this brings the cam out far enough so the short butt sliders will pass in front of the clearing. While the short butt sliders are passing in front of the clearing cam, the second move takes place, this brings the cam out far enough to clear the long butt sliders.

When the welt courses have been knit, the clearing cam moves halfway in so as to clear the short butt sliders and lower long butts, then while the long butt sliders are being lowered it moves fully in to complete its cycle of movement.

This complete assembly gives very little trouble, seldom gets out of adjustment, and is not difficult to readjust if and when this becomes necessary for any reason. The main thing to bear in mind when the cable adjustment is used is to keep the clearing cam as near to the short butt sliders at the halfway

position as possible, just so the butts will not rub against the clearing cam when they pass by.

Once more we come to an adjustment which we cannot see, however, a little practice mixed with an equal amount of good judgment is all that is necessary. Recently an apprentice on Komets asked: How can you tell when the clearing cam is set right at the halfway position? We suggested that he remove the section, place a short butt slider against the face of the clearing cam, and move the lever (203348) out by hand far enough to clear the butt; then note the position of the lever (203348) in relation to the outer surface of the clearing cam bracket.

We suggested several other ways which would work equally well but he replied, "This one will suit me".

Occasionally the spring in the pocket will break. As a rule, no damage results from this and the spring can be replaced in a few minutes. Sometimes the clearing cam will get out of adjustment due to broken butts becoming lodged behind the cam, making it impossible for the cable to pull the lever (203348) fully out. When this occurs, the cable will stretch or even be broken. In either event the trouble is not hard to find or to correct. Most of the trouble we have with the clearing cam is caused by one of two important factors: time and distance. The inward and outward movement of the clearing cam must take place at a given time in relation to the slider butt movement in the upper cylinder, and the cam must move in-and-out for a given distance. The distance is of course controlled by adjustment, plus the steps on the quality drum cams. The time depends entirely on the quality drum movement and may we suggest in this connection if it should become necessary to advance or retard the quality drum for any reason, make sure that such a change will not affect the element of timing as it applies to the clearing cam movement.

In the next article of this series we shall consider the welt stitch cam section.

K. O. METZ

How Do You Treat Callers?

(*Continued from page* 67)

deal with them.

The chief executive of one of the largest business organizations in the South told me once that anyone who asked to see him could have three minutes of his time and then more if his business demanded it. All persons who came to see him, saw him. They saw him in his office and not in the hall, over a rail or over the telephone. This is good business in public relations and while discussing this fact, it should be recorded that no business organization in the South enjoys greater public esteem than the one just mentioned.

But in this theoretical plant, the traveling man finally got in only to be growled at, buffeted about and to have his wares derided and abused, although the executive or purchasing agent wanted and expected to buy something. There are only a few of this kind of men. His idea of business was being hardboiled, indifferent, cold and impenetrable. There is no use in carrying this discussion on because the idea of this type of buyer is already recognized. The salesman may have made a sale but his mental attitude was entirely different and he went on his trip still a public relations factor. but for this organization his reactions were entirely different.

These calls, as they influence public relations, boil down to only three points:

1. Reception on entrance to mill.
2. Promptness with which salesman sees his man.
3. Attitude of man toward salesman.

I grant that there is another side to this picture, that there are windy, snooping, boring, tiresome traveling men who worry the management or the purchasing agent. They are in the minority and yet they mean well in their ignorance of commercial ethics. They are public relations factors, nevertheless, and must be converted into constructive use.

In these troublesome days, when all people are nervous and tired, tolerance is wonderful. Patience is wonderful. Diplomatic and courteous treatment of people is valuable. All must be considerate of each other and this means that each man must consume as little of the other man's time as possible. When time is granted, it must be used as efficiently as possible.

The statements made in this story apply to all kinds of business and all kinds of managers. This is no finger of criticism pointed at the textile industry except as a caution that it has a bearing on public relations.

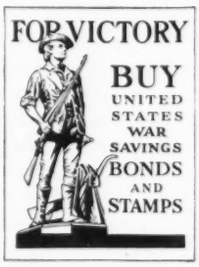
"Public relations is an operating philosophy, to be applied in everything your business organization does." Your business organization contacts salesmen, hence there is a public relations problem connected with this contact. If any manager thinks this is not true, he should ask of the next salesman who enters his office his opinion of certain managers and certain organizations.

He may be somewhat reserved in discussing one of your competitors with you, particularly if his opinion of the man or organization is unfavorable, but he will finally get out of your office, and on the train or in the hotel, or at some club, and in the cocktail hour of his friends his real opinions will spill out.

This statement does not mean to cast any aspersions on the good name of the salesman. He is only human and is reacting exactly as all the rest of the people of this nation react. All people are to the public what the public thinks they are. The public builds its opinion of you out of the composite reactions of the opinions of the people who know you and this includes the individual public as well as the composite public.

The salesmen who call on you and your organization are barriers or carriers of good will. It is easy to make them constructive agents in your public relations program.

BUY U.S. WAR SAVINGS BONDS



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Mobilization of American dollars will help the United Nations drive Victory wedges deeper into Axis defenses.

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Investment in United States WAR SAVINGS BONDS AND WAR SAVINGS STAMPS will be our strongest guarantee for the return of prosperity after the United Nations win the war. Every dollar you save in these WAR SAVINGS Bonds and Stamps can be put to work when peace returns. They will insure the army of buyers essential for the manufacture of civilian and industrial commodities.

Victory demands supplies. Join the public rush for voluntary enlistment of your dollars in United States WAR SAVINGS BONDS AND STAMPS, today.

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TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Shipments Of Rayon Full-Fashioned Hose Mounting—Underwear Industry Trending Toward 100 Per Cent Military Basis—New Orders On Use of Elastic Yarns Issued—Union Full-Fashioned Workers Granted Wage Increase On Rayon Numbers—Outerwear Industry Faces Critical Problems

Philadelphia, April 16, 1942

WAR ORDERS for the armed forces are becoming predominating influences in the underwear and half-hose field as the Army and Navy are continually expanded. This immediately makes the position of the civilian buyer or consumer of such lines more difficult, not only as to selling but more importantly in the way of their obtaining raw materials such as cotton yarns. Underwear manufacturers, for example, declare that unless they have priority numbers indicating yarns are going into military lines they cannot buy sales cotton yarns. Hosiery manufacturers have made further strides this month in the way of improving and expanding production of rayon numbers which American women will wear to great degree during the war. Prices of civilian knit goods are strong due to tightness in supply and higher wage scales for the textile industry.

Reflecting effect of war curtailment of silk and nylon yarns, shipments of nylon and silk full-fashioned hosiery for women during the first two months of this year registered sharp declines compared with the first two months of 1941. There was a drop of 85 per cent in shipments of all-silk and a drop of 31 per cent in nylons during this period in which shipments of rayon spurted more than 40 per cent. During these two months shipments of all types of hosiery gained more than 8 per cent, mainly reflecting large gains in seamless lines. Retailers are now promoting rayon full-fashioned hosiery, stressing the dullness, elasticity and snag resistance of the latest numbers of rayon that are priced at 79 cents to $1.15 per pair in most outlets. Much of the retail promotions of these lines emphasizes that the new rayon full-fashioned numbers are entirely different in appearance and wearing qualities than earlier stockings made from this yarn. One large retailer in the promotion of such lines said: "Now rayon stockings have a high twist that gives them sheerness, dullness and elasticity. They have been tested for strength, snag resistance and resistance to abrasion. They look slim and neat on your legs. Care must be taken to get maximum wear. With each pair is a washing direction slip. Read it carefully, follow it and you will cherish your rayon stockings." Such promotions are intended to remove from the consumer mind any doubts that may have developed following introduction of the first 1941 models late in that year, some of which were hurried in making and failed to give the consumer a run for her money so far as wear was concerned. Retailers feel the new types will be the best full-fashioned American women can obtain for the war.

Shipments of half-hose and slacks in the first two months of this year gained 18 per cent over the 1941 weeks, losses in silk full-fashioned being more than overcome by substantial gains registered in wool and slacks. The gain in wool half-hose was mainly due to large increases in such lines for use by the armed forces of this country, which use is expected to expand from month to month as the size of the Army is increased. Shipments of slacks during the first two months showed a gain of almost 50 per cent and this was in part due to the speed-up by knitters that were trying to build up stocks, as well as their customers, before the rubber situation became so acute. The salability of slacks, some feel, depends mainly on elasticity of the tops so that this urge to beat the rubber gun was understandable but at the same time it is recognized that part of the large gain was because consumer demand was expected to be much larger this year. Shipments of seamless wool half-hose gained more than 60 per cent and further gains have been made since but larger share of these are Army socks and not for civilians.

Shipments of women's seamless lines increased conservatively in the first two months with substantial losses in silk and large gains in rayon and 20 per cent gain in cotton. It is apparent that the hosiery industry is not going to be able to expand its production of cotton hose to a great extent because so much of such yarn is going into the manufacture of war goods, especially Army materials and garments. Anklet shipments gained 22 per cent and jobbers expect these lines to expand in popularity among women as silk full-fashioned scarcity becomes more apparent. There was a gain of 18.5 per cent in infants' and children's goods with this type expanding production at present. Bundle goods are also showing a larger output trend so far this year.

Production of knit underwear is breaking records and notwithstanding this large output the civilian trade is continually diminishing as demands for the armed forces increase. Unfilled orders with manufacturers at the end of February in the knit cotton and wool division, totaled close to 8,000,000 dozens, the largest amount for months, if not a record. Department of Commerce data for February show that the total was 7,905,000 dozens compared with 5,874,000 dozens for January and 6,250,000 dozens for February. New business in the month was more than 4,400,000 dozens compared with approximately 2,900,000 dozens in January and 3,157,000 dozens in February of last year. The increase in unfilled underwear orders has come about through greatly expanded military orders as well as the civilian trade being anxious to take about all the goods that manufacturers will permit them to have. During the last few weeks the Army and Navy have placed enormous orders for cotton undergarments with the shirts knitted and the drawers of the shorts type. Manufacturers of garments for the Army were bidding in the last invitation on a carded knit shirt whereas in the past mainly combed shirts were taken. But the quality of the carded shirt taken was high, it being made from a good carded yarn although this was not of the so-called super carded type. As time goes on and demands for the Army expand it is probable this dropping in quality will have to go further but up to now the Army has held its specifi-

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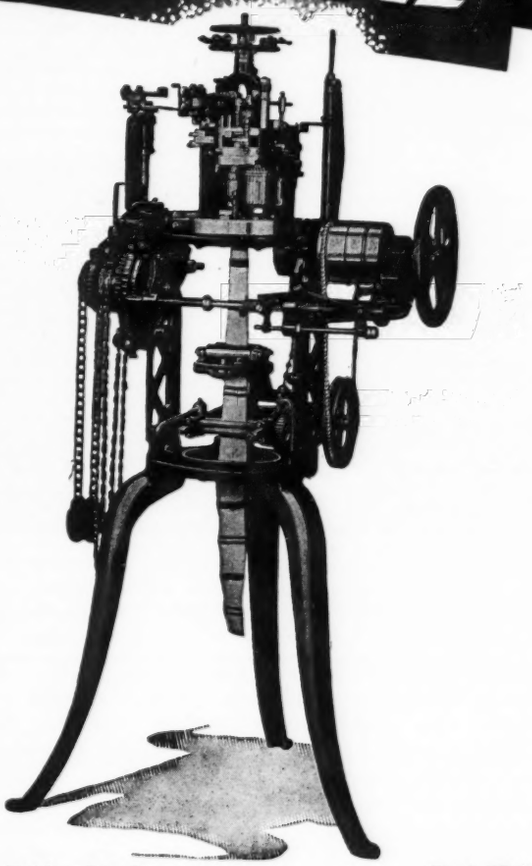

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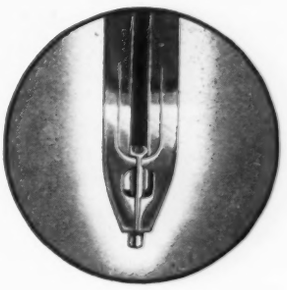

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Only *"Presto Carriers"* enable you to use *large and small* tubes, as needed, and therefore prevent losses through press offs; besides allowing you to *retube right on the machine,* saving considerable *valuable time* of your mechanics.

New improved tubes assure you of *longer life.*

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cations almost as high as in peace as the carded garments were almost as good as the combed in various requirements.

Wage Rates Raised for Rayon Hosiery

After negotiations between representatives of Full-Fashioned Hosiery Manufacturers of America, Inc., and the American Federation of Hosiery Workers, it was announced late in March that increases in wage rates for rayon hosiery had been adopted that became part of the national contract between the two groups, effective March 23. The following increases on rayon styles were ratified:

	Inc. over old rates, P.C.
Old machines, leggers—	
39 gauge	16.2-17.1
42 gauge	16.1-17.5
45 gauge	14.9-17.5
48 gauge	14.6-15.7
51 gauge	12.8-13.6
Old machines, footers—	
39 gauge	12.2
42 gauge	13.2-15.9
45 gauge	11.7-14.0
48 gauge	11.3-11.9
51 gauge	9.9-10.3
Toppers—	
39 gauge	14.3
42 gauge	15.3
45 gauge	12.7
48 gauge	15.3
51 gauge	9.6
Loopers—	
39 gauge	8.7
42 gauge	8.0
45 gauge	3.7
48 gauge	3.6
51 gauge	3.3
Seamers	20.0
New machines, leggers—	
42 gauge	12.0-13.7
45 gauge	12.0-14.2
51 gauge	4.1- 7.4
New machines, footers—	
45 gauge	8.9-9.3
51 gauge	5.5-5.8

Wage rates of 11 hosiery mills in the Reading, Pa., area were also adjusted to enable employees to obtain wage increases made necessary by the introduction of alternate yarns such as rayon and cotton. The adjustments under which the rate for various operations will be increased over the silk rates adopted last September were granted under an agreement negotiated by the Keystone Hosiery Manufacturers Association and Branch 10, American Federation of Hosiery Workers. At the same time it was announced union leaders hoped that arbitration of their 15 cents an hour wage increase demand would begin at an early date. Union leaders had requested the latter increase because of the higher cost of living at present compared with that current at the time the last national agreement was signed but up to the present time neither association has acted on this.

Underwear Mills' War Orders Expand Greatly

Roy A. Cheney, president of the Underwear Institute, told 58 East Pennsylvania underwear manufacturers at a meeting in Reading on March 30 that before three months have passed, the underwear industry will be operating 100 per cent on Government orders. Included in this are all types of Army and Navy supplies as well as goods to be manufactured for lease-lend. The industry is producing a constantly lessening amount of goods for civilian use, Mr. Cheney said, in making clear the present trend. He suggested that manufacturers take advantage of the opportunities afforded them in the operation of "school" mills. These schools are training establishments in mills in various parts of the country to which underwear manufacturers can send foreman and superintendents to have them taught the Government's requirements in Army and Navy underwear supplies and the methods to be followed in making Government goods.

Mr. Cheney said no manufacturer who hopes to have his share of Government business should neglect to take advantage of the training opportunities these "school" mills afford plant executives. This training is particularly vital in view of the prediction that in the near future practically all the underwear will be used by the Government. Spreading the volume of business during the present war so that all mills share proportionately is expected to produce a healthier situation not only during the war but following it. He said this would avert the costly enlargement of a few large plants to more than peace-time volume of their business. In this way excess investment in large plant additions will be avoided as well as unemployment in small plants which might be unable to get a share of war time orders. Mr. Cheney said, "I can say, having studied the situation in our particular field, that there will be underwear for civilian needs for the next year. But I can make no prediction after that."

FORECAST

(Opinion submitted by COTTON's market correspondent)

Philadelphia, April 16, 1942

INDICATIONS are definite that this is to be for the United States much more of a total war than was dreamed of a few months back. This is certain unless unforeseen developments change the outlook very soon. Assuming that the country does go in for this total war it will have even greater effects on business and the general economy than have been predicted previously. Briefly it means that all elements in the country will have to make greater sacrifices and in general the individual interest will be liquidated in favor of the general good. Unless a manufacturer of textiles, for instance, is making goods that are of use in total war effort the chances are great that he will either have to convert his plant to some type of war work or else close for the duration.

Already we have evidence of this in our own industry. Carpet manufacturers have been considered almost as non-essential in total war effort and they have been so restricted by Government orders that it is now almost impossible to continue in business of manufacturing these floor coverings alone.

In the woolen and worsted fabric industry unless weavers are working on Government cloths it is impossible for them to obtain much wool so that they have to turn to substitute fabrics or else close their plants. Under these conditions most are turning to war work where their machinery is so equipped. Automobile lining weavers are making serges and cotton ducks. Carpet mills are turning out the latter also under the conversion plan.

This trend will become more apparent in the knit goods trade this year and already most underwear manufacturers are working on Government contracts; those that are not find it impossible to obtain sales cotton yarns. Hosiery mills have not be reached to this extent but even here the 1942 trend will be either to produce something useful in the war effort or else they will find it impossible to proceed with business as usual. Experts have failed, however, to find any other product than hosiery such equipment can turn out; yet this may not eliminate the trade from war work of some nature.

Under a total war effort business will be very limited in profits and for most these will be much smaller than in peace. The difficulties of doing business in civilian lines are going to increase immeasurably in the months just ahead without considering profits so that what the Government allows in the way of ceilings or prices set for military goods will determine how much money textile manufacturers will or will not make this year. Ceilings will become so general that the effect will be the same as the general freezing contemplated under the so-called Baruch plan. We are coming to frozen retail prices as well as of labor wage rates for the duration.

Durham Pictures Hose Plight as Serious

Difficulties confronting the South's full-fashioned hosiery industry turning out approximately 37 per cent of women's stockings were outlined by Taylor Durham, secretary of the

Faster Skein Reeling plus Savings with FIDELITY TWIN-UNIT SYSTEM

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3. Close control of skein weight and yardage.
4. Greater flexibility for changes in production, dye lots, yarns, etc.
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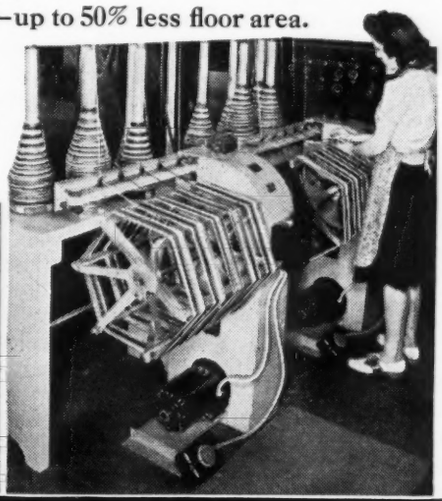

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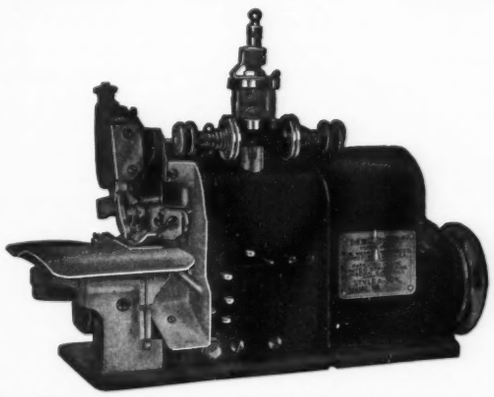

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Southern Hosiery Manufacturers Association. This industry during the last few months has been forced to turn from silk, when that fiber was made unavailable, to nylon but such yarn was not continued for the hosiery trade for a long period and manufacturers were then compelled to turn to improved rayon yarns for the manufacture of such goods. Mr. Durham said in commenting on the situation, "One more conversion and we're done for." Most cotton yarn is unsuited for the industry's fine-gauge machines. Recently New York importers have been receiving very small quantities of English lisle yarns at a price above that of silk but not in sufficient quantities to produce large amounts of cotton full-fashioned hosiery. It was pointed out unemployment of industry operatives because of conversion and consequent reduction of operation in the East can be and largely has been absorbed by war plants but in the rural South there is little work to which these skilled hands may be turned.

He said hosiery mills in the South are in relatively isolated communities and there is frequently only one operation of a chain of plants in the region. Secretary Durham estimated that production and consequently employment already had been cut around 65 to 70 per cent of normal. "These operatives, some 60 per cent of whom are women and girls, are highly trained," he said. "Surely there is something at which their dexterous hands and keen eyesight can be used in our war effort. We have searched and are continuing to search for some assembling work." He estimated that 30,000 to 35,000 normally are employed in the Southern hosiery industry with more than half of them in North Carolina.

Rayons Stand Out in Hosiery Shipments

Shipment of all types of hosiery during the first two months of this year registered a gain of more than 9 per cent over last year, notwithstanding widespread curtailment in the full-fashioned section because of the yarn situation. In this period, shipment gains were reported in all major divisions except women's full-fashioned hosiery and ribbed goods. In women's full-fashioned hosiery a decline in all-silk and all-nylon constructions was offset to a considerable degree by gains in part-silk, part-nylon, rayon and cotton constructions. Decreases in women's seamless silk constructions were more than offset by increases in seamless rayon, cotton and wool hosiery shipments. Increases in men's half-hose and slack socks shipments as well as those for bundle goods, athletic socks, children's and infants' hosiery and anklets largely account for the seamless gains which were registered during this period. Large gains were registered in men's half-hose, particularly in wool, reflecting the large orders for use by the Army and Navy but there was also large gain achieved in the slack socks, indicating a good season in such items notwithstanding the elastic yarn regulations.

Hosiery Group Interprets Elastic Yarn Amendment

In view of the misunderstanding in some parts of the hosiery industry relative to the WPB amendment to its original order, freezing for 30 days the use of rubber yarns and elastic threads, the National Association of Hosiery Manufacturers discussed the matter with Government officials. President Earl Constantine advised manufacturers using elastic yarns as follows: 1, A knitter of rubber yarn or elastic thread may use up all such yarn or thread which was already on his knitting machines prior to March 29; 2, A knitter of rubber yarn or elastic thread may use up all such yarn or thread which had been removed by him from the vendor's container, wrapping, packing or put-up, prior to March 29 and placed by him on cones for use on his knitting machines. This means yarn received in the skein and coned by the knitter; 3, knitter may use up any rubber yarn or elastic thread which had been treated by him with oil or whose form of put-up he had changed prior to March 29. This would include rewind from one cone to another; 4, knitter may not use or process any rubber yarn or elastic thread which was in the vendor's container, wrappings, or put-up at 12.01 o'clock A. M., March 29, 1942, even when such yarn or thread was on cones.

While not the principal consumer of rubber in the textile field, the knit goods industry expanded its use of such material in the last three years to an important extent, especially in men's shorts, in children's anklets, and women's stockings. In view of this any order of the Government affecting such yarns is of keen interest. The remaining stocks of such yarns are tied up at least until April 30 by the conservation orders of the War Production Board.

Outerwear Trade Warned of Further Shortages

Outerwear manufacturers at their annual meeting in New York late in March received no encouragement for an improvement in the outlook for obtaining larger supplies of worsted and wool yarns or important dyes, especially the important vat and chrome dyes. Arthur Besse, president of the National Association of Wool Manufacturers, who addressed the meeting said that there was little hope of getting more of the needed yarns. Mr. Besse outlined the severe wool restrictions of the Government to date and declared that relief was not to be expected in view of the large demand on wool by the armed forces.

Ramond W. Jacoby, dye technician for the Ciba Co., told of a similar picture in dyes used by sweater manufacturers. He said that the vat and chrome dyes were out and added that recently 40 per cent of the country's dye production was going into Government requirements. He said it had been computed that the quantities of dyes needed for only one recent Government request for textiles was around 4,000,000 to 5,000,000 pounds. Mr. Jacoby said that the acid colors were now in fair supply, the neutral acid color situation was only fair, and of the direct dyes some were in a tight situation with others easy. The acetates, he emphasized, were in a very bad way and shortly would be worse. Of the developed dyes, he said the situation was only fair.

Sidney S. Korzenik, secretary of the National Knitted Outerwear Association, told the group that the most serious difficulty confronting the knitted outerwear manufacturer this year will be the obtaining of sufficient materials to maintain operation. He said the association records indicated the industry during 1941 produced a total dollar value based on manufacturers' selling price of about $125,000,000. The materials that were consumed in the production of this output consisted of the following: wool and worsted yarn, 34,000,000 pounds; cotton, 26,000,000 pounds; and rayon 4,000,000 pounds.

Large Volume Underwear Unfilled Contracts

Unfilled orders with underwear manufacturers at the end of February in the knit cotton and wool division of the industry totalled almost 8,000,000 dozen, which was a record. The Department of Commerce figures for that month placed the total at 7,905,000 dozens compared with 6,250,000 dozens for February a year ago. The record total resulted from a new order business in February of 4,423,000 dozens resulting from large civilian and Government business. Statistics for the production of underwear for 1941 and 1940 were also released by the Department of Commerce. The pro-

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of details in the knitting of fine hosiery is the key to quality production—and the foundation of successful selling. To help manufacturers obtain more complete control over the needle factor in knitting, Torrington Needles are machine-made—produced with greater precision by special machine methods. Give your hosiery the benefit of their finer, more accurately controlled finish, temper and dimensional uniformity.

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WHEN PROMPT DELIVERY COUNTS SO MUCH

NOW, when your products are so urgently needed, you can profit by the ready availability of the Torrington Needle Bearing. As a result of Torrington's expansion program, Needle Bearings in standard sizes and types can be *promptly delivered on all priority orders!*

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IT IS EASY TO INSTALL. Built as a single compact unit, the bearing is simply pressed into place in the housing—a quick operation ideally suited to high speed production line methods.

IT CONSERVES OTHER MATERIALS on which you may be encountering delivery problems. Because of the Needle Bearing's small outside diameter, you can reduce the size of your housings, and hence the amount of material required.

IT ELIMINATES EXTRA PARTS AND ASSEMBLY STEPS. No retaining rings, washers, or end plates are needed to hold the bearing in place—and in most applications, no special lubricating equipment need be provided.

AND IN PRODUCT PERFORMANCE, the Needle Bearing offers the advantages of long life, high load capacity, low power consumption, minimum need of service attention.

Let a Torrington engineer show you how this unusual bearing can help you key your textile machinery designs to wartime conditions. For further details, write, wire, or phone for Catalog No. 115.

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duction of knit cotton and wool underwear increased from 21,833,341 dozen garments during 1940 to 28,432,060 dozen garments during 1941, an increase of approximately 30 per cent.

Finer Rayon Hosiery Reported in Prospect

John H. Brine of Oscar Heineman Corp., a former president of the National Association of Hosiery Manufacturers, in an address before hosiery manufacturers in Chicago, said that a practical rayon yarn, finer than the finest (50-denier) now going into full-fashioned hosiery is possible. He predicted that in spite of the fact rayon producers have more business than they can handle, rayons representing vast improvements over those of today will be on the market before many months have passed. He said while it is true American women up to now have not generally accepted full-fashioned rayon hosiery that they will continue to demand hosiery that compares with what they have been wearing, adding that there is enough initiative and ability in the hosiery industry to meet that demand especially with the new high-twist rayon yarns already being made available and the substantial improvement in prospect.

Rayon Yarn Producer Sells Machinery to Mexico

Imperial Rayon Corp. has been forced to stop production at its plant at Gloucester, N. J., because its building is required for expansion of the New York Shipbuilding Co., so that arrangements have been made to dispose of the machinery and equipment in Mexico for a cash price of $125,000. In commenting on the company's affairs, Paul Zens, president, said that the plant had been shut down from September 1940 to March 1941. Partial operations were resumed in March of last year turning out colored and special yarns. He said the corporation's officers and directors recognized the fact that to enable it to compete with the larger producers, the size of the plant would have had to have been materially increased. None of these plans or proposals materialized with the last and perhaps most promising having to be abandoned when the war made it impossible to secure the equipment.

Retailers Are Promoting Improved Rayon Hose

Finally receiving sufficient of the newly developed fine denier full-fashioned rayon stocking to warrant the use of advertising copy on a scale approximating that formerly was used to promote silk numbers, larger retailers are beginning to outline to consumers the story of improvements over the old rayon numbers. They are stressing particularly dullness, elasticity, and snag resistance of the present numbers which are retailing at 79 cents to $1.15 per pair. Chain stores are also featuring several weights priced usually from 69 cents for the 100-denier up to 89 cents for 75-denier, with one of the shoe chains currently selling a 51-gauge rayon as low as 79 cents a pair. In his advertisement one retailer promoted rayon numbers as follows: "Now rayon stockings have a high twist that gives them sheerness, dullness and elasticity. They are tested for strength, snag resistance and resistance to abrasion. They look slim and neat on your legs. Care must be given to laundrying to get maximum wear. With each pair is a washing instruction slip. Read it carefully, follow it, and you will cherish your rayon stockings." Notwithstanding this retail trend the head of a prominent research firm made the comment that while every manufacturer is striving to perfect twist and finishes, nevertheless "it is not believed that the utility value of rayon will approach that of either silk or nylon, since it does not have the resistance to snagging, bagging or abrasion which will be found in the other fibers."

British Exports of Sweaters and Half-Hose to Be Curbed

Shipments of sweaters and men's half-hose to the United States and Canada from Great Britain are expected to be among the lines affected by a new order issued by the British Board of Trade making exports of knitted goods made wholly or in part of wool, subject to license beginning April 21. The object of this action, the order states, is to safeguard essential supplies for the home market and it is not likely that applications for the export of such goods will be granted at present. Reports in the trade are that sufficient British wool half-hose to last through the coming season under normal conditions is in the hands of American retailers and importers after months of accumulation. Nevertheless, this order came as a shock to importers. Exports of British lisle hosiery and cotton underwear to this country suspended in January in an earlier move to preserve supplies in Great Britain. That action was taken by license control and since it developed into a ban rather than a curb, the present order on woolen goods is expected likewise to result in total suspension of shipments as of April 21.

Hosiery Facilities Are Being Surveyed

The National Association of Hosiery Manufacturers is undertaking a survey of all the plants within its industry for the purpose of ascertaining what excess facilities are available under present conditions, and ways by which such facilities may be applied to war work. The survey takes the form of two questionnaires. One of these covers the machine tool facilities and trained mechanics existing in the machine shops of hosiery mills, while the other seeks facts related to applying other facilities to war work.

In a letter addressed to all hosiery manufacturers by Earl Constantine, president of the association, it is pointed out that the production of the industry for civilian use is already curtailed and that this is likely to be true in larger degree as war demands increase. The skilled labor thus released could well be applied to the manufacture of war articles which require skillful handling. In addition, there are factory floor spaces and warehousing facilities for which demand will doubtless arise. Several hosiery plants are already engaged in war work, supplementing their hosiery operations. It is believed more of this can be developed.

While most machine shops within the hosiery industry are relatively small they frequently possess excellent machine tools needed in the repair of knitting and other equipment, or used for the making of parts. Where a number of such shops are concentrated in an area, the aggregate machine tool capacity, if placed under single management or control, would doubtless be sufficient to execute sub-contracts, and in some cases even prime contracts.

The survey is being conducted with the knowledge and encouragement of the proper authorities in Washington. The facts produced will govern any further efforts or actions. This is probably the first industry-wide survey of this character undertaken by any of the non-durable consumer goods industries.

New Plant to Make Ammonia

Plans for the immediate erection of a plant to increase substantially the supply of ammonia and its derivatives have been announced by E. M. Allen, president of Mathieson Alkali Works, Inc., New York City. The new plant will be financed by the Defense Plant Corporation, and will be erected and operated under lease by the Mathieson organization. The ammonia will be produced synthetically.

TRENDS—YARN MARKETS

Cotton Yarns For Civilian Use Becoming Tighter With Indications Trend Will Shortly Become More Marked—Worsted Yarn Producers Turning Out Wool Substitute Counts—Rayon Yarns In Larger Demand Than Supply

Philadelphia, April 16, 1942

LATE IN MARCH the Office of Price Administration issued revisions in combed yarn regulations covering premiums and also set tops that can be charged for thread yarns. Demand for all types of sales cotton yarns is at a peak as indicated by the record cotton consumption although exports are very limited. We are using as much cotton in the United States now as both this country and foreign countries formerly consumed. Civilian buyers of cotton yarns find very few counts that they can obtain now, bulk going into military orders that enjoy a high priority rating. Rayon yarns the only other type available in this country in large amounts are selling in increasing quantities but consumers are being allocated poundage so that shortages exist. Progress is being made in perfecting rayon counts for use in the manufacture of full-fashioned hosiery and production of such goods is mounting from month to month. Worsted spinners are working on new yarns that use relatively little fine wool and larger amounts of substitute or coarse wool fibers.

Cotton Yarns

Bulk of combed yarns are going into goods of military type and a constantly mounting volume of carded yarns also so that there is a continually diminishing poundage that is left for the civilian trade. During recent months it has been difficult for buyers of combed yarns for civilian use to place contracts with spinners but at no time has this been more noticeable than at the present. Forecasts are now being made that in the not distant future practically all of the sales combed yarn production will be taken by the armed forces and there will be none of this quality left for civilian use. At the present time most combed spinners are allotting old customers a very small percentage of their requirements so that about 80 per cent of their output is going into military goods.

Up to the last month buyers of carded yarns for civilian use did not have a great deal of difficulty in placing their orders but this situation has changed materially so that the average carded spinner now is reluctant to accept further business unless the order is accompanied by a priority number indicating its place in the military program. Certain types of carded yarn are tighter in this respect than others, this being most apparent in the medium and finer sizes. This is also changing rapidly and large orders for cotton duck in recent weeks have brought about a similar tightness in the coarse counts so that as the situation is developing practically all carded numbers now are almost as tight in respect to deliveries as the combed numbers previously were. Recent invitations on cotton goods and garments by the local Army Depot have called for greatly enlarged quantities of all types, indicating that manufacturers and spinners will be pressed to produce all of such goods required, thereby reducing the poundage left for civilian buyers. The outlook in this connection in view of the program of enlarging the Army and the Navy is that this trend will continue at accelerated speed.

Spinners of both carded and combed yarns early in April expressed fairly general approval of the price ceilings which the Government has imposed which is in contrast to the widespread disapproval voiced during the months following the introduction of these ceilings almost a year ago. Since that time the ceilings have been amended and revised numerous times with most of these being made at the request of the industry so that by these changes earlier causes of complaint have been largely eliminated. In this connection sales cotton yarn spinners emphasize that the general wage change made effective April 20 which raises the minimum rate from 37½ cents an hour up to 40 cents will result in a substantial increase in their costs. It is pointed out that the advance for the lower paid help will necessitate advances in the higher brackets so that the change will be felt. Spinners are not ready to claim that this wage increase will cause them to demand a higher ceiling but they assert that the matter will bear watching over the coming weeks and that if it is found a change is required this will be requested in due course.

Rayon

Rayon yarn supplies available for use in the manufacture of civilian goods are expected to show further contraction during the next couple of months. The fact that orders for various Army cloths now being placed will call for heavy poundage of high tenacity rayon is expected to cause changes in productive capacity which will reduce the output of standard yarns by a considerable margin. In addition hosiery manufacturers are expected in the near future to make a new plea for additional supplies of rayon and it would not be unexpected if Latin America requests a larger allocation during May than the amount set aside for them in the original order. Although hosiery manufacturers are expected to request additional yarn, it is pointed out that when the April allocation order was issued no time limit was placed on it as was the case in previous orders which set definite dates during which percentages should apply. Hosiery manufacturers have been dissatisfied with the poundage available because additional manufacturers of such goods have recently been inquiring for rayon yarn which previously had not sought to share in the poundage. It is believed that manufacturers delayed seeking rayon supplies and sufficient nylon or silk on hand at that time.

Increased demand for rayon products, uses in new fields to replace imported textile fibers and larger war orders combined to cause a 23 per cent increase in rayon deliveries to domestic mills during the first quarter of 1942. During this time the deliveries of yarn and staple fiber totalled 153,500,000 pounds compared with 124,700,000 pounds for the corresponding period a year previous. Deliveries of rayon yarn alone amounted to 117,100,000 pounds with 102,000,000 pounds shipped during the first quarter of 1940 which is an increase of 13 per cent. During the first quarter practically all shipments were on a reduced quota basis to enable hosiery knitters and other former silk users to obtain the WPB allocations of yarn with as little hardship to regular users as possible.

Rayon yarn reserve stocks at the end of March were at a dangerously low level, constituting well under a week's supply and consisting almost entirely of supplies set aside in a hardship pool for former silk users. At the end of March stocks totalled 4,000,000 pounds compared with 4,400,000 pounds at the end of February or with 10,200,000 pounds at the end of March last year. An even sharper increase than in the case of yarn was registered by staple fiber deliveries to domestic mills during the first quarter.

Worsted Yarns

Spinners of worsted knitting yarns and producers of outerwear are in a very difficult position because of the severe restrictions on wool consumption issued by the War Production Board in its wool conservation plan. During the second quarter of this year such manufacturers have been cut down 10 to 20 per cent of their basic poundage which makes it imperative for them to use substitutes for finer wools if they are to turn out sufficient yarns and goods to meet the demands. In order to do this spinners are turning to a number of substitute fibers, some purchasing larger quantities of coarse wools on which restrictions are less severe and also they are turning to the larger use of rayon, mohair and cotton yarns. This indicates that in the latter part of the year the consumer will be buying outerwear of lower standards than in recent years but at the same time manufacturers hope that the garments will give adequate consumer service for the duration. During the last month OPA ceilings were announced on worsted yarns which were slightly higher than the trade had anticipated.

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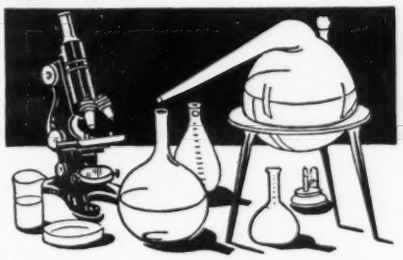

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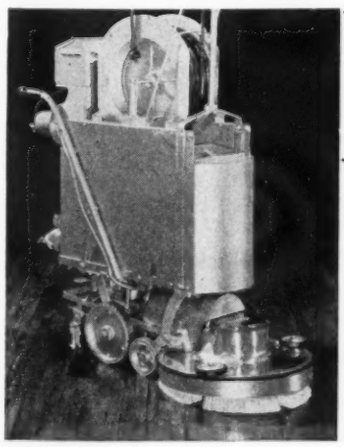

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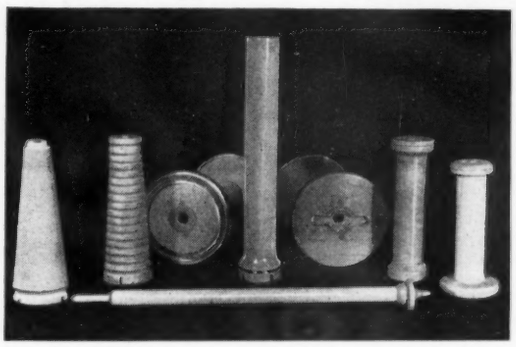

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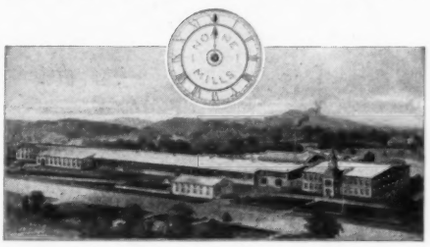

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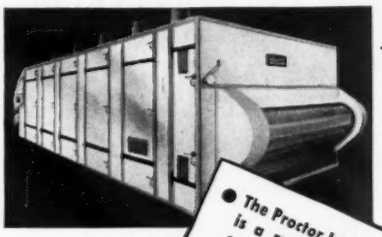

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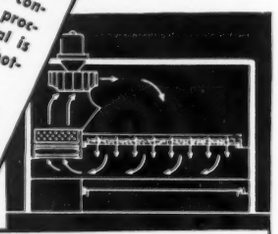

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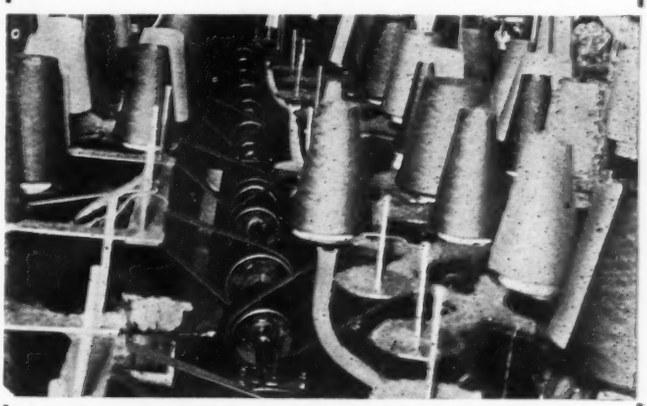

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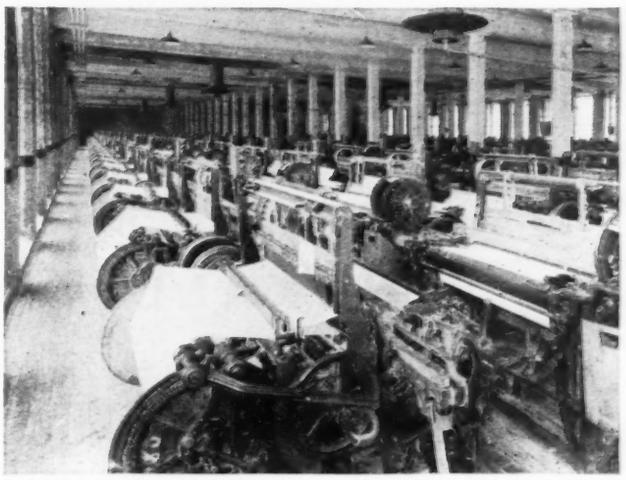

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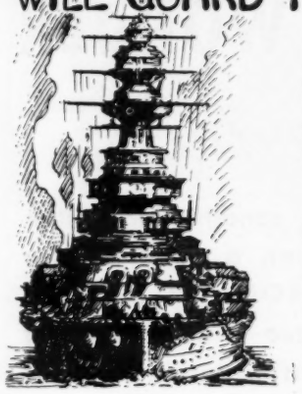
AS NAVIES GUARD THE SEAS

Kali PRODUCTS

WILL GUARD YOUR PROFITS



Once you have used Kali textile chemicals for processing rayon, cotton, and other fibres you too will find, as have scores of America's leading textile mills, that Kali products will safe-guard your profits.

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MANUFACTURERS OF

TEXTILE MACHINERY PARTS

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Leather Belting

Leather Belting has the highest permanent pulling power of any known belting material, thereby making it capable of transmitting more power. Rely on Leather Belting.

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SPECIALIZING IN TEXTILE COSTS AND OPERATING METHODS FOR MORE THAN A QUARTER OF A CENTURY

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Spinning, Twister, Spooler and Quiller Cylinders—Card Screens—Picker Screens—Condenser Screens—Comber Tins—Waste Chutes—Lap Aprons—Aspirators

A Sheet Metal Works Serving Textile Plants

Why stuffing boxes are giving way to JOHNSON ROTARY PRESSURE JOINTS

● At Delta Finishing Co., Philadelphia, Pa.—Johnson Joints installed on sanforizer.
● At Hope Webbing Co., Pawtucket, R. I.—Johnson Joint installed on a 7 ft. slasher.
● At Everlastik, Inc., Chelsea, Mass.—Johnson Joints installed on battery of dry cans.

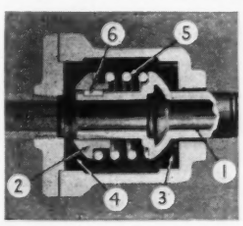
WHY are so many textile mills switching over to the Johnson Joint? For two sound reasons: 1st, it ends all stuffing box problems; 2nd, it helps to step up plant production.

HOW does it end all stuffing box troubles? By means of a simple, rugged construction that never needs to be oiled, has no packing at all to wear out, adjusts itself automatically to varying pressure, and absorbs both lateral and angular misalignment without loss of operating efficiency.

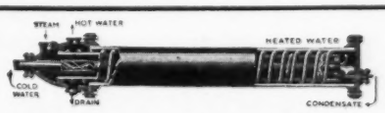
HOW does it step up plant production? Partly by eliminating many causes of machinery shutdown and thereby saving valuable production time. Mostly by making possible modern, more efficient methods of can drainage in which condensate is removed continuously, by means of a syphon pipe, through the same head that admits the steam. Machines can be started without delay—can temperatures can be higher and more uniformly maintained.

WHY don't you write for comprehensive new bulletin which shows a size and type of the Johnson Joint for every dry can, slasher or sanforizer.

NOTE THE SIMPLE, PACKLESS CONSTRUCTION



Nipple (1) is fastened to roll or drum. Collar (2) is keyed (6) to nipple but is free to slide back and forth. Carbon graphite seal ring (3) and bearing ring (4) eliminate packing and are completely self-lubricating. Spring (5) is for initial seating only; in operation joint is pressure sealed—adjusts itself automatically for most efficient operation.



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Desize with EXSIZE

Exsize is a standardized liquid concentrate of enzymes which converts starches and starch derivatives to readily soluble end products. Thus they can be quickly and completely removed with a minimum of rinsing.

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Warehouses at New York,
and Textile Warehouse Co., Greenville, S. C.

STYLE 20.

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RIBBERS

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W. T. **LANE** & BROS., Inc.
Manufacturers : POUGHKEEPSIE, N. Y.

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Cling-Surface gives lasting grip—makes slack-running belts a practical reality. Delivered power is stepped-up as much as 40%, with prolonged life of belts, bearings and shaftings . . . Cling-Surface is in the service of the U. S. Army and Navy at home and abroad.

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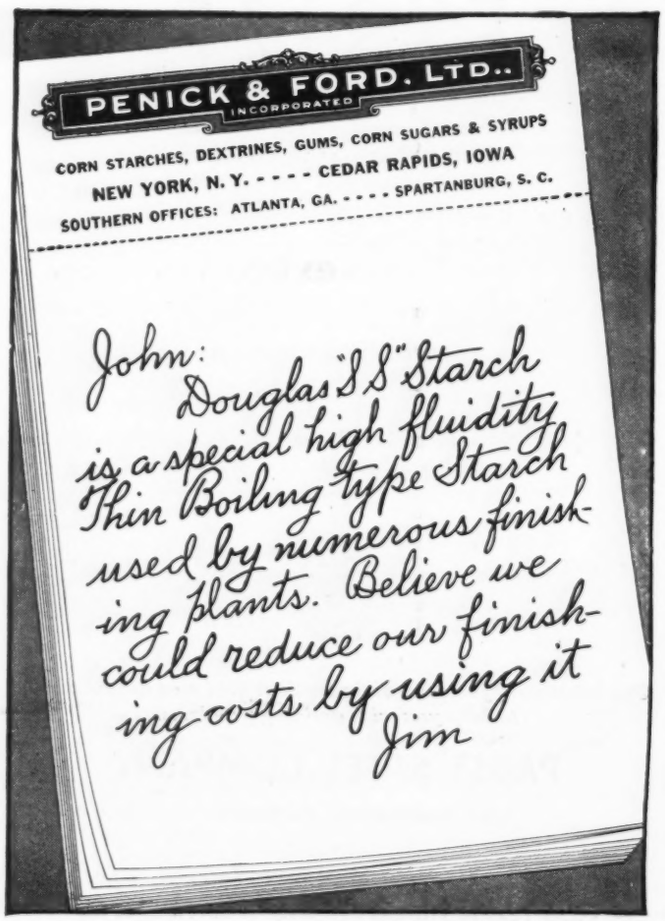
SPEED-UP PRODUCTION ★ REDUCE WEAR

with **CLING-SURFACE** *Belt Treatment*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The quality finishing of Rayon and Cotton constructions is a sales must—today. Many outstanding names in American Hosiery depend upon Eternalure Superior Hosiery Finishes to make their productions look better, feel better and wear better.

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"The Leather with the Hair on"
Bondaron
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—The kind of Quality that means *real Economy* over a period of years . . . 3 to 5 times longer life . . . fewer interruptions in production . . . fewer seconds in materials!

—Quality that is being proved daily in hundreds of mills . . . against *all* competition.

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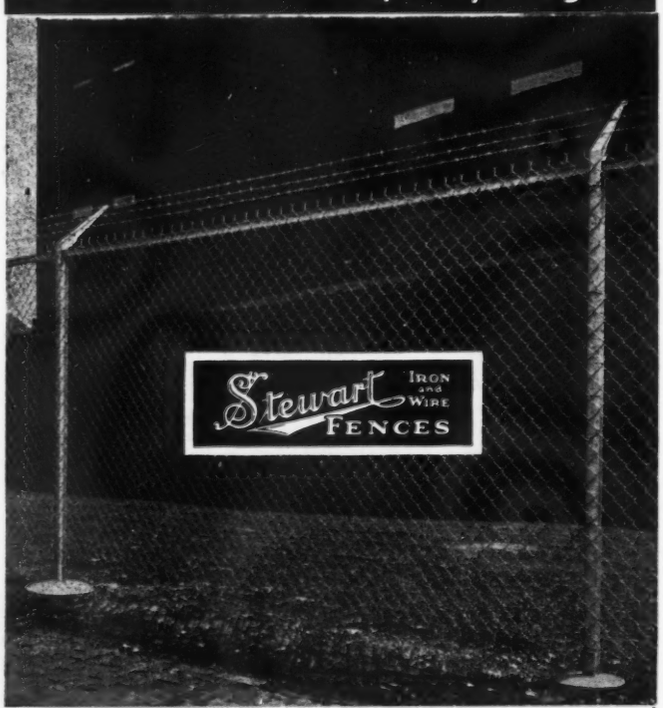

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Rooms with private bath
Single from **$3.30**
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- 5 MINUTES TO TIMES SQUARE
- B. & O. Motor Coaches stop at our door

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Manufacturing finely machined precision parts of shells for America's Big Guns, in addition to supplying replacement parts for Textile Machines whose output is vital to America's all-out Battle.

Also Holds True of Textile Machinery . . .

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FOR TEXTILE MACHINERY
HENDERSON FOUNDRY & MACHINE CO., HAMPTON, GA.

BETTER SIZE PENETRATION • HIGHER SLASHER PRODUCTION • LOWER SIZE COST • LOWER STEAM COST • LESS CYLINDER STICKING • IMPROVED WEAVING

with the

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PRESSURE REGULATOR

Obtain better size penetration by applying correct squeeze roll pressure for the particular material being processed through slasher. Compensate for variables across the warp by simple adjustment of pressure. Decrease sticking to cylinders and fly in weave room by removing excess size.

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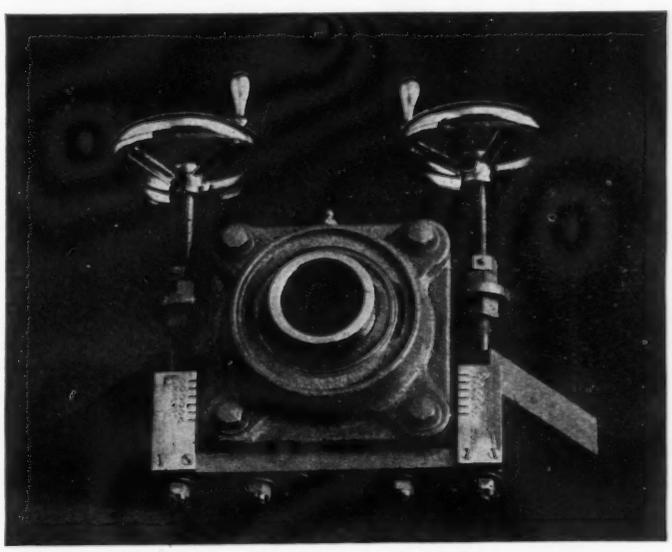

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Specializing in Textile Problems — **WABAN, MASSACHUSETTS**
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This is the Age OF SPEEDS and LONG DRAFT SPINNING

Ring Travelers of greater stability are necessary. Wentworth Double Duty, Wentworth Gravity and Gravity Express meet these requirements.

Duplex Twister Travelers — Berylian Finish Steel Travelers for Silk and Rayon
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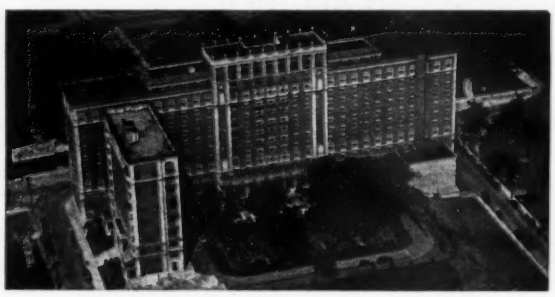
OPERATING 3000 ROOMS IN SOUTHERN HOTELS

When You Visit ATLANTA Stay At The BILTMORE



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600 outside rooms, each with bath . . . ample parking and garage accommodations . . . popular prices prevail in dining room and coffee shop.

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UNITED STATES TESTING COMPANY, INC.

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SPEEDS TEXTILE PRODUCTION!

Add up these Conco features for the *answer* to your materials handling problem: 1. Push Button Control, for safe, positive one-hand operation. 2. Simple, heavy construction employing only two gear reductions. 3. Solenoid Electric Brake. 4. Positive Limit Switch. 5. Double cast iron drums—30 times diameter of flexible plow steel cable. 6. Gear shafts operate in ball bearings in an oil bath. 7. Dust-tight, streamlined housing. Orders filled with reasonable promptness.

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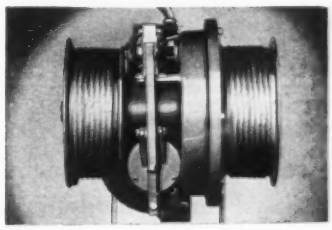
3 CAPACITIES!

250-lb. – $139.50
500-lb. – $149.50
1000-lb. – $159.50

Write for Illustrated Circular Giving Full Specifications

DOUBLE—DRUM CONSTRUCTION



Double Drums, with left and right hand machined grooves allow for full lift without cable overlap. Load is balanced better; cable lasts longer.

HOOK, TROLLEY OR BOLT SUSPENSION

Three suspensions allow for installation in a variety of spots. Easily movable from place to place. Works ideally with a Conco I-Beam Trolley at $10.00.

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Patent Attorneys
1206 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
Paul B. Eaton, Former member Examining Corps U. S. Patent Office

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HASSLER SPEED INDICATOR
1—2,000 RPM
Textile Industry Research, Inc.
11 W. 42nd St., New York, N. Y.

WANTED
ONE SKEIN MERCERIZING UNIT
250 lb. daily capacity, Smith, Drum or similar make. Address all offers to Box 582, care Cotton, Grant Bldg., Atlanta, Ga.

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Superintendent of small tapestry plant. Man with full knowledge of jacquard work; pick and pick; 4 x 4 box looms making fine upholstering fabrics. Man must know how to take complete charge of plant and personnel. Write giving full particulars and experience. Address Box 583, care COTTON, Grant Bldg., Atlanta, Ga.

PROMOTION WANTED

as cotton classer. Six years' experience, now assistant in large mill, can leave on 10 to 15 day notice, will give personal interview on week-end. Box 584, care COTTON, Grant Bldg., Atlanta, Ga.

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TEXTILE GRADUATE with six years' experience carding, spinning, research and cost work. Desires position overseer or assistant superintendent. Available July 1. Address Box 585, care COTTON, Grant Bldg., Atlanta, Ga.

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Practical dyer, finisher and textile chemist. Wide experience in cotton, rayon and mixed fabrics. Also fast color work including Vats and Naphthols. Address Box 586, care COTTON, Grant Bldg., Atlanta, Georgia.

POSITION WANTED

Foreman in the card room. I have finished carding and spinning course with I. C. S. Familiar with processing rayon staple fiber and with Whitin's Inner Draft and Super Draft Roving frames. 100% sober. 48 years old. Address Box 587, care COTTON, Grant Bldg., Atlanta, Ga.

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Job as overseer of weaving in plain weave room by I. C. S. graduate; 18 years' experience on Draper looms; 3½ years as second hand, 37 years old; classed 3-A in draft. Now employed but desire change for promotion. Reply Box 588, c/o COTTON, Grant Bldg., Atlanta, Ga.

Your Advertisement on This Page

will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire to sell or buy some used equipment? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,500 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Note the rates above and send in your advertisement today.

COTTON, Grant Bldg., ATLANTA, GA.

DANDUX

For the past quarter century Dandux Canvas Products have been serving American industry, and have become known in all fields as real "quality leaders"—offering greater and longer service and true "long run" economy. In these days of emergency, a major portion of our greatly expanded production facilities are devoted to the manufacture of canvas and canvas products for America's armed forces and it is not possible for us to supply ordinary peace time requirements in the manner to which we had become accustomed.

We assure all users of Canvas Products, however, that although Uncle Sam comes first, we shall be glad to have their inquiries and to supply their requirements to the best of our ability, subject, of course, to existing regulations and restrictions.

C. R. Daniels, Inc.

101 CROSBY STREET • NEW YORK, N. Y

Newark Boston Chicago Cleveland Detroit Philadelphia Pittsburgh Buffalo Hartford Milwaukee Alberton, Md.

CLOTH ROOM MACHINERY FOR DUCK

Eight Roll Vertical Brusher

- Brushing Machines
- Shearing Machines
- Inspecting Machines
- Rolling Machines
- Sewing Machines

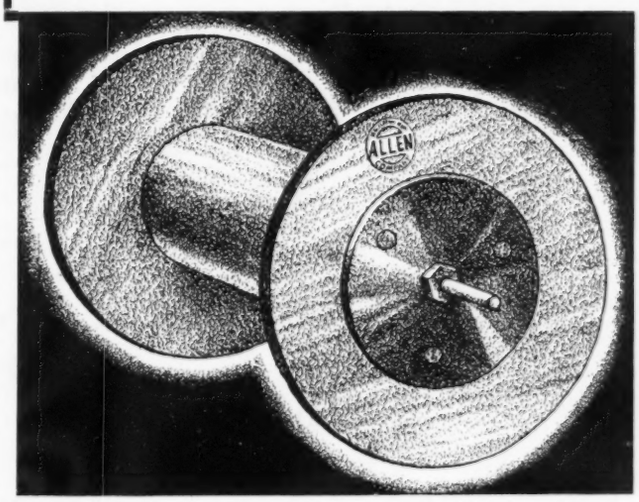
Send for our new CATALOG NO. 7 showing COTTON and RAYON MACHINERY

Curtis & Marble MACHINE COMPANY

WORCESTER, MASSACHUSETTS

Branch Offices: NEW YORK • PHILADELPHIA • GREENVILLE, S. C.

Why waste words?



Action is what we need and action is what you get when Allen Super H-C Rayon Warper Beams are on the receiving end of your warpers. Rock Maple barrels . . . sound solid internal construction . . . perfect balance . . . unbreakable Wooden Heads with a finish that defies chipping and prevents snagging, reinforced with adjustable concaved steel plates. Allen Beams are raring for anything rayon can throw at them and will "take it" up to 1,000 y.p.m. ACT NOW. WRITE.

ALLEN COMPANY 421 RIVER ROAD NEW BEDFORD, MASS.

Southern Representative, Mr. L. E. Wooten, Fort Mill, S. C.

RAPIDASE

THE PREFERRED DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems— our technical men are at your service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.

180 MADISON AVENUE, NEW YORK

Miss Camille Anderson of Memphis was selected Maid-Of-Cotton for 1942. Textile manufacturers select Burk-Schier Wet Processing Agents for dyeing and finishing yarns and fabrics made of cotton.

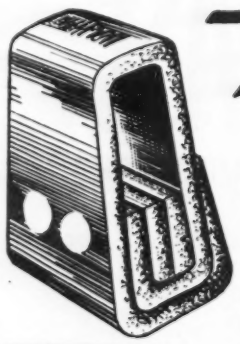
BURKART-SCHIER CHEMICAL CO.

BURK-SCHIER CHATTANOOGA, TENNESSEE BURK-SCHIER

PENETRANTS • SOFTENERS • SOLUBLE OILS • FINISHES

Champion **TEXTILE LEATHER PRODUCTS**

– by name – in fact



Champion leathers are the products of a highly specialized business built to serve the needs of modern textile production. They are made in a new plant, by modern precision machinery and experienced hands, long trained in this work. Champion textile leathers are products of original design and development by experts who know the requirements and the practical needs for which they are used.

If it is not better made, or better designed for its use, it is not a Champion product.

W. D. DODENHOFF COMPANY

619 RUTHERFORD STREET

GREENVILLE, SOUTH CAROLINA

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Designers and Manufacturers of

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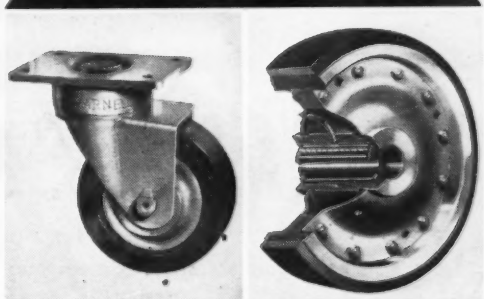

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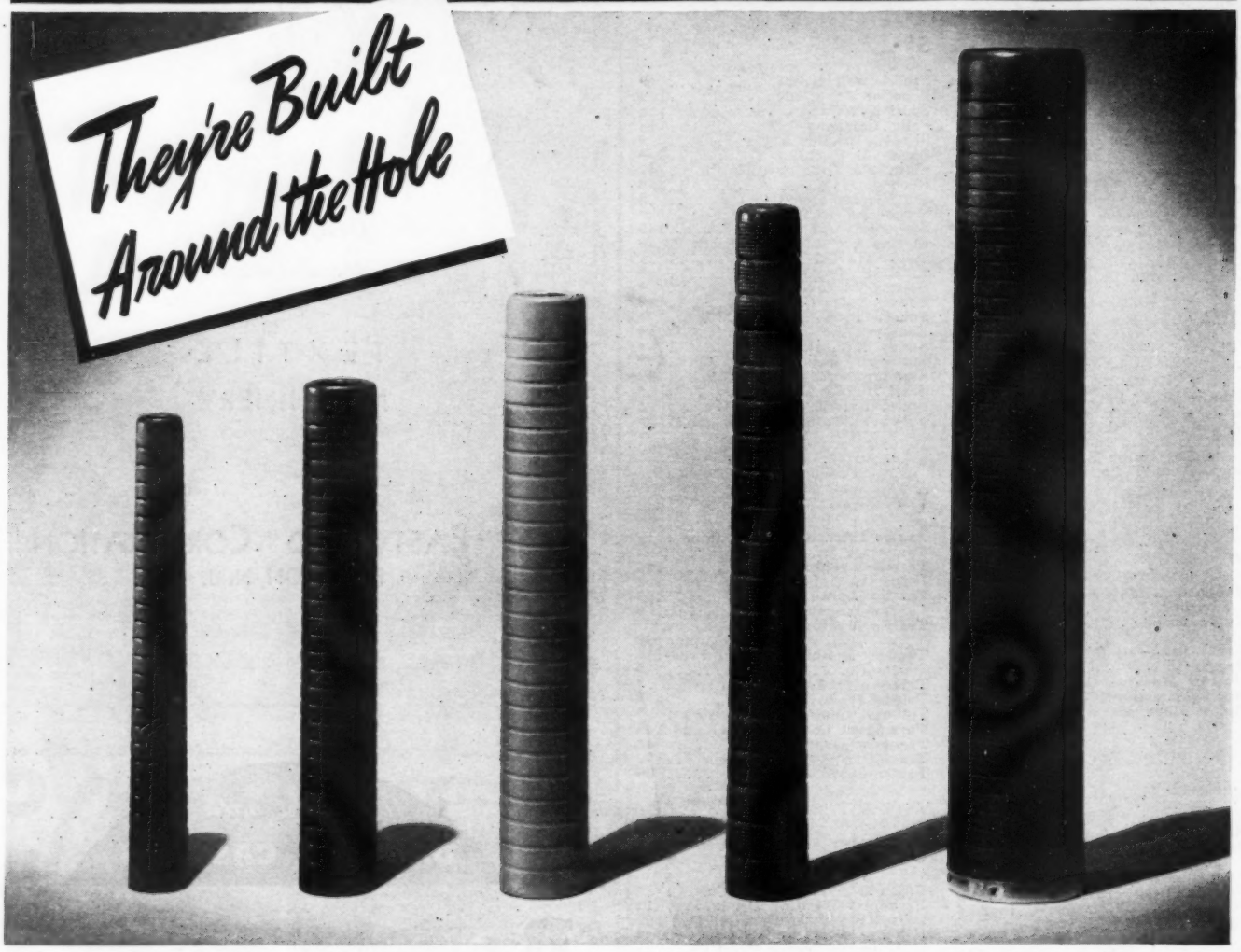

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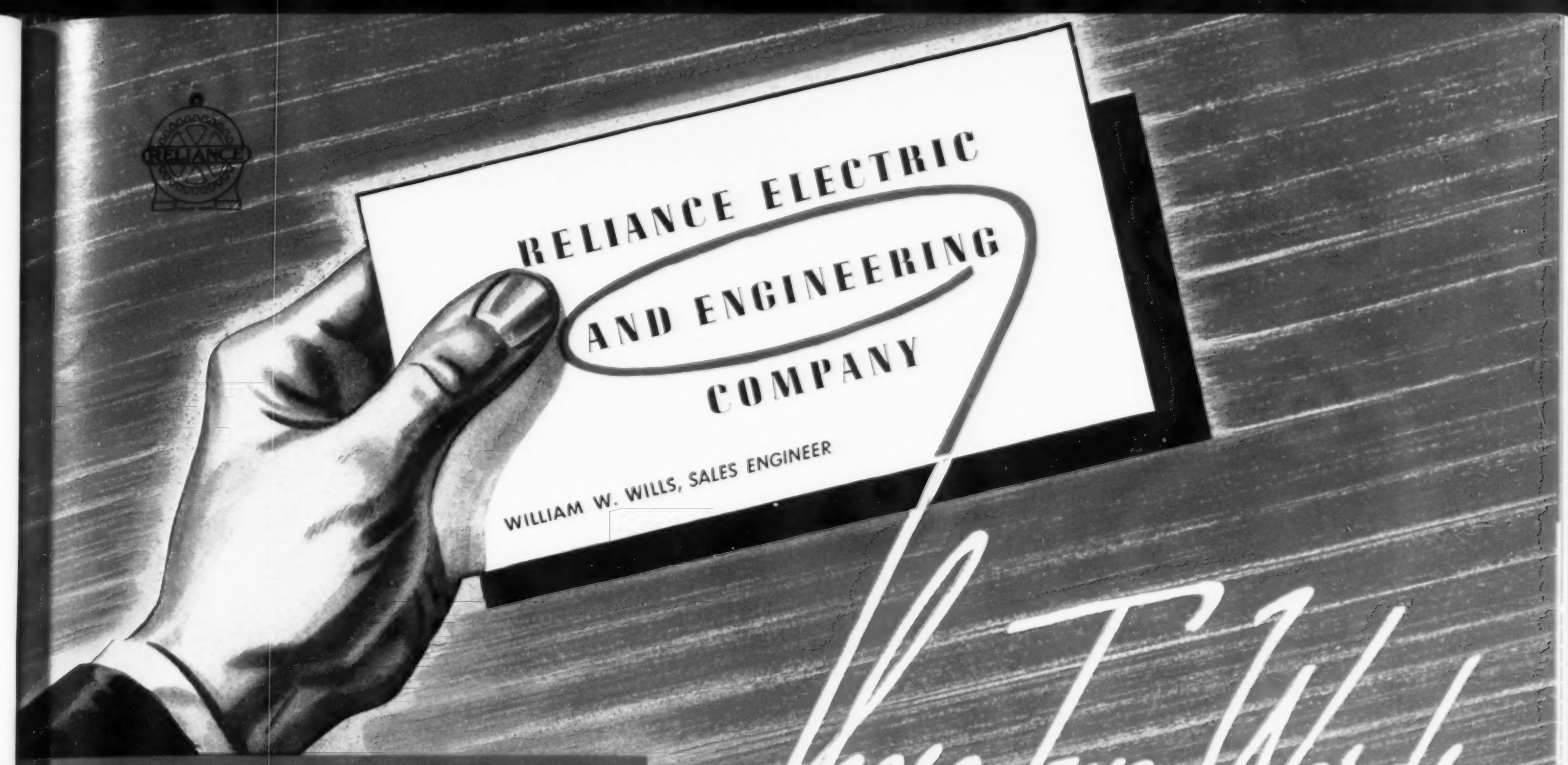

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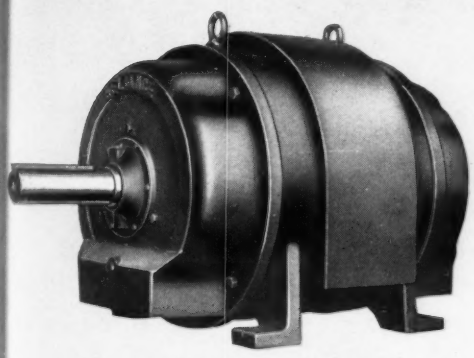

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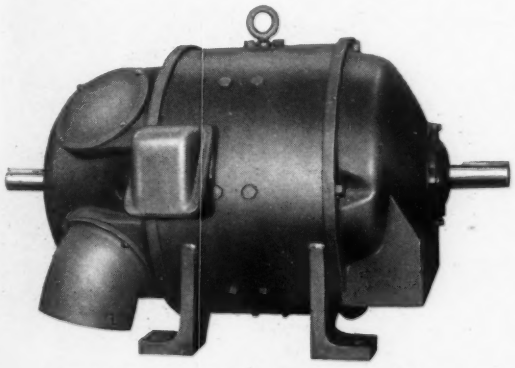

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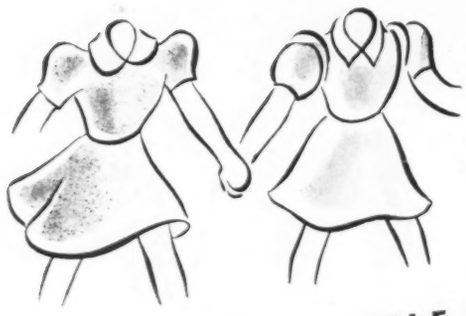

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